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IN THE UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA AND STATE OF CALIFORNIA Plaintiffs, v. J. B. STRINGFELLOW, et al., Defendants.	CIVIL ACTION NO. 83-2501 JMI(MX) ~~[PROPOSED]~~ CONSENT DECREE

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I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), and the State of California ("the State") jointly filed a complaint in this matter pursuant to, inter alia, the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), Sections 106 and 107, 42 U.S.C. §§ 9606 and 9607 ("Complaint").

B. Pursuant to CERCLA, the Complaint seeks, inter alia: (1) reimbursement of costs incurred by the United States and the State for response actions at the Stringfellow Hazardous Waste Superfund Site in Riverside County, California ("the Site"), together with accrued interest; and (2) performance of studies and response work by the defendants in connection with the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP").

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of negotiations with the potentially responsible parties regarding the implementation of certain interim remedial design and remedial actions for the Site. EPA provided the State with an opportunity to participate in these negotiations and to be a party to this Consent Decree.

D. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40

C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 8, 1983.

E. In response to a release or a substantial threat of a release of hazardous substances at or from the Site, EPA and the State conducted a "Fast Track" and a "Full Scale" Remedial Investigation and Feasibility Study ("RI/FS") for the Site. EPA has issued four Records of Decision ("ROD") selecting response work for the Site. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA and the State jointly published proposed plans for remedial action in June 1988 and in March 1989. EPA provided an opportunity for written and oral comments from the public on the proposed plans.

F. In its fourth ROD, executed on September 30, 1990 ("1990 ROD"), EPA selected additional response actions outlined in the June 1988 and March 1989 proposed plans. See Appendix B (1990 ROD). Initial performance of remedial action selected in the 1990 ROD is a primary objective of this Consent Decree.

G. Based on the information presently available to them, EPA and the State believe that the Work under this Consent Decree will be properly and promptly conducted by the Settling Defendants if conducted in accordance with the requirements of this Consent Decree and its appendices.

H. The remedial action selected by the 1990 ROD and the Work to be performed by the Settling Defendants shall constitute a response action taken or ordered by the President.

J. The Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated

by the Parties in good faith and implementation of this Consent Decree will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Consent Decree is fair, reasonable, and in the public interest.

K. By entering into this Consent Decree, Settling Defendants do not make any admission of law or fact other than those contained in Paragraphs 7, 44, 45, and 46 below.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Decree and the underlying Complaint, Settling Defendants waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. Settling Defendants shall not challenge the terms of this Consent Decree, if entered by the Court, or this Court's jurisdiction to enter and enforce this Consent Decree.

III. PARTIES BOUND

2. This Consent Decree applies to and is binding upon the United States and the State and upon Settling Defendants and their heirs, successors and assigns. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property shall in no way

alter such Settling Defendant's responsibilities under this Consent Decree.

3. Settling Defendants shall provide a copy of this Consent Decree to each contractor hired to perform the Work (as defined below) required by this Consent Decree and to each person representing any Settling Defendant with respect to the Site or the Work, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. Settling Defendants or their contractors shall provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work required by this Consent Decree. Settling Defendants shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Settling Defendants within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Decree which are defined in CERCLA, RCRA, or in regulations promulgated thereunder shall have the meaning assigned to them therein. For terms used in this Consent Decree or in the attached appendices, which are incorporated into this Consent Decree, the following definitions shall apply. For convenience of reference, definitions of certain terms are repeated in the

Statement of Work at Appendix A, which is attached hereto and incorporated herein by reference.

The "Administrative Order on Consent" or "AOC" shall mean the Administrative Order on Consent, No. 88-17, executed by the Director, Toxic and Waste Management Division, EPA Region IX on May 27, 1988, and all amendments and attachments thereto.

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601 et seq.

"Consent Decree" shall mean this Decree and all appendices attached hereto (listed in Section XXVIII). In the event of conflict between this Decree and any appendix, this Decree shall control.

"Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

"Deliverable" shall mean all submissions required of the Settling Defendants under Section 4.0 of the Statement of Work.

"DTSC" shall mean the Department of Toxic Substances Control within the California Environmental Protection Agency (formerly the State Department of Health Services) and any successor departments or agencies of the State.

"Element of Work" shall mean a portion of the Work that is designated as a separate project in the Statement of Work, i.e., Zone 1 Dewatering System, Community Extraction System, Routine Groundwater Monitoring, Routine Site Maintenance, and Community Relations Support. Each Element of Work may have multiple components.

"EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

The "Fifth Amendment to the Administrative Order on Consent" or "Fifth Amendment to the AOC" shall mean the amendment to the Administrative Order on Consent executed by the Director, Hazardous Waste Management Division, EPA Region IX, on July 25, 1990, and all attachments thereto.

"Future Response Costs" shall mean all response costs incurred by the United States or the State in connection with the Site that were incurred on or after the date of lodging of this Consent Decree.

"National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including, but not limited to, any amendments thereto.

"Oversight" shall mean those activities undertaken by the United States, the State, and their contractors in connection with

the monitoring, review, and supervision of any activities undertaken by Settling Defendants pursuant to this Consent Decree.

"Paragraph" shall mean a portion of this Consent Decree identified by an arabic numeral.

"Parties" shall mean the signatories to this Consent Decree.

"Past Response Costs" shall mean all response costs that the United States or the State incurred in connection with the Site prior to the date this Consent Decree was lodged.

"Performance Standard" shall mean those specific requirements to be achieved by the Settling Defendants in implementing the Elements of Work outlined in Section 1.1.3 of the Statement of Work. The Performance Standards are specified in Sections 2.3.1.4, 2.3.4.4, and 2.4.1.4 of the Statement of Work.

"Plaintiffs" shall mean the United States and the State of California.

"RCRA" shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. 6901 et seq. (also known as the Resource Conservation and Recovery Act).

"Record of Decision" or "ROD" shall mean a written decision document that constitutes agency action by EPA in the selection, or concurrence in the selection, of remedial action for the Site.

The "1990 Record of Decision" or "1990 ROD" shall mean the EPA Record of Decision relating to the Site executed on September 30, 1990, by the Regional Administrator, EPA Region IX,

and all attachments thereto. The 1990 ROD is attached as Appendix B to this Consent Decree.

"Residuals" shall mean any solid waste, sludge, residue, contaminated media, or other by-product of the treatment, storage, or disposal of any water generated in the performance of the Work. This term also includes contaminated materials produced by any excavation, drilling, or soil dislocation resulting from performance of the Work.

"Response Cost" shall mean any direct or indirect cost incurred in connection with the Site that any Party is entitled to recover under Section 107 of CERCLA, 42 U.S.C. § 107, or any analogous provision of State law.

"Section" shall mean a portion of this Consent Decree identified by a roman numeral.

"Settling Defendants" shall mean: Alumax, Inc.; the Deutsch Company; General Electric Co.; McDonnell Douglas Corporation; Montrose Chemical Corporation of California; NI Industries; Northrop Corporation; Quantum Chemical Corporation (formerly National Distillers & Chemical Corporation); Quemetco Inc.; Rheem Manufacturing Co.; Rockwell International Corporation; Rohr Industries; Stauffer Chemical Company; J.B. Stringfellow, Jr.; Stringfellow Quarry Company; Stringfellow Quarry Company, Inc.; and Weyerhauser, Inc.

"Site" shall mean the Stringfellow Hazardous Waste Superfund Site in Riverside County, California depicted generally on the map attached to the 1990 ROD.

"State" shall mean the State of California.

"Statement of Work" or "SOW" shall mean the document appended to and incorporated into this Consent Decree detailing the requirements for performance of the Work and any modifications to the SOW made in accordance with this Consent Decree. The SOW is attached as Appendix A to this Consent Decree.

"United States" shall mean the United States of America.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33), 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27); and (4) any "hazardous material" under California Health and Safety Code Section 25501(k).

"Work" shall mean all activities necessary to perform the following Elements of Work: Zone I Dewatering System, Community Extraction System, Routine Groundwater Monitoring, Routine Site Maintenance, and Community Relations Support.

V. GENERAL PROVISIONS

5. The objectives of the Parties in entering into this Consent Decree are (a) to protect public health and welfare and the environment at the Site by continuing previously initiated response activities; designing, constructing, and implementing certain response actions selected in the 1990 ROD; and performing routine Site maintenance and community relations support activities; and (b) to provide a mechanism for resolution of certain cost recovery claims raised by the Complaint. While this Consent Decree does not

effect any release for any claims brought by the United States or the State in the Complaint, it does resolve significant cost recovery issues and ensures that the Settling Defendants will perform significant response action at the Site.

6. Settling Defendants acknowledge that the United States and the State intend to seek to require Settling Defendants to perform response actions in addition to those embodied in this Consent Decree. Settling Defendants may oppose such efforts of the United States and the State.

7. Settling Defendants agree that the 1990 ROD is consistent with the NCP and waive any right to raise any challenge to the 1990 ROD in this or any other action.

8. Commitments by Settling Defendants.

a. Settling Defendants shall finance and perform the Work in accordance with this Consent Decree and all plans, standards, specifications, and schedules set forth in or approved by EPA pursuant to this Consent Decree. Settling Defendants shall also reimburse the United States for Past Response Costs and Future Response Costs as provided in this Consent Decree.

b. The obligations of Settling Defendants to finance and perform the Work and to pay amounts owed the United States under this Consent Decree are joint and several. In the event of the insolvency of one or more Settling Defendants or other failure of any one or more Settling Defendants to implement the requirements of this Consent Decree, the remaining Settling Defendants shall complete all such requirements.

9. Compliance With Applicable Law.

All activities undertaken by Settling Defendants pursuant to this Consent Decree shall be performed in accordance with all applicable, or relevant and appropriate, requirements of federal and state environmental laws. The activities conducted pursuant to this Consent Decree, if approved by EPA, shall be considered to be consistent with the NCP. As specified herein, EPA will consult with DTSC prior to approving activities by the Settling Defendants under this Consent Decree.

10. Permits.

a. As provided in Section 121(e) of CERCLA and § 300.5 of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site. Where any portion of the Work requires a federal, state, or local permit or authorization, Settling Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or authorizations.

b. The Settling Defendants may seek relief under the provisions of Section XVII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any such permit or authorization required for the Work.

c. This Consent Decree is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

VI. PERFORMANCE OF THE WORK BY SETTLING DEFENDANTS

11. Remedial Design and Remedial Action.

a. All Work under this Consent Decree is subject to approval by EPA. EPA will, in accordance with the Statement of Work, consult with DTSC before (1) responding to Settling Defendants with comments on or approvals of all deliverables (or proposed amendments to deliverables), (2) approving the Work, or (3) certifying completion of the Work under this Consent Decree pursuant to Section XIII. DTSC shall provide to EPA, in a timely manner, its written comments on all deliverables (or proposed amendments to deliverables) submitted to EPA by Settling Defendants and on all requests for approval of Work and requests for Certification of Completion of Work.

b. Settling Defendants shall, in accordance with the Statement of Work, prepare and submit a Work Plan for approval by EPA pursuant to Section XI (Submissions Requiring Agency Approval). Once the Work Plan, and as required by the Statement of Work, the Health and Safety Plan, the Quality Assurance Project Plan, the Sampling Plan, or other plans, designs and reports, are approved by EPA (after seeking review and comment by DTSC), Settling Defendants shall implement the Work Plan.

c. Settling Defendants shall submit deliverables required under the Statement of Work in accordance with the schedules set forth and referred to therein. Once the deliverables are approved pursuant to Section XI (Submissions Requiring Agency

Approval), they shall be incorporated into and, where applicable, be enforceable under this Consent Decree.

12. The Work performed by the Settling Defendants pursuant to this Consent Decree shall include the obligation to achieve the Performance Standards set forth in Section 2.3.1.4, 2.3.4.4, and 2.4.1.4 of the Statement of Work.

13. Settling Defendants acknowledge and agree that nothing in this Consent Decree, the Statement of Work, or the approval of deliverables constitutes a warranty or representation of any kind by Plaintiffs that compliance with the requirements set forth in the Statement of Work or any deliverable will achieve the Performance Standards or satisfy other requirements or obligations undertaken by Settling Defendants in the Statement of Work.

14. Settling Defendants shall, prior to any shipment of Waste Material from the Site to either an in-state or out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator and the DTSC Project Coordinator of such shipment of Waste Material. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed 10 cubic yards. Any off-site disposal of Waste Material must be in accordance with EPA's Off-Site Disposal Policy and applicable state law.

a. The Settling Defendants shall include in the written notification the following information, where available:

(1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. The Settling Defendants shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by the Settling Defendants following the award of any contract for implementation of any Element of Work that will involve off-site disposal. The Settling Defendants shall provide the information required by Paragraph 14.a as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

VII. ADDITIONAL RESPONSE ACTIONS

15. In the event that EPA (after consultation with DTSC), determines based upon the available data, that additional response actions are necessary to: (a) meet the Performance Standards identified in the Statement of Work; (b) re-establish compliance with a Performance Standard identified in the Statement of Work subsequent to EPA's written acceptance of Settling Defendants' Achievement of Performance Standard Reports; or (c) satisfy any requirements or obligations undertaken by Settling Defendants in the Statement of Work, EPA shall notify the Settling Defendants' Project Coordinator of the need to perform such additional response actions.

In order for Settling Defendants to be required to perform additional response actions, EPA must notify the Settling Defendants of the demand for additional response actions at least sixty (60) days before the time established in the Statement of Work for the termination of the Settling Defendants' obligation to perform under the Element of Work for which additional response actions are demanded. For the purposes of this Paragraph, the obligation to perform under any particular Element of Work terminates on the last day of the Period of Operation, or time specified for conducting an activity specified in the Statement of Work, for that Element of Work. Subject to the foregoing, the Settling Defendants may propose to EPA that additional response actions are necessary.

16. Within sixty (60) days of receipt of notice from EPA that additional response actions are necessary (or such longer time as may be specified by EPA), Settling Defendants shall submit for approval by EPA pursuant to Section XI (Submissions Requiring Agency Approval), a plan or plans for the implementation of the additional response actions. EPA (after seeking review and comment by DTSC) may require submissions of additional plans relating to the implementation of the additional response actions, including, but not limited to a Health and Safety Plan, a Quality Assurance Project Plan, or a Sampling Plan. The plan or plans shall conform to the applicable requirements of Paragraph 11.b. and c. Upon approval of the plan(s) by EPA (after seeking review and comment by DTSC), Settling Defendants shall implement the plan(s) for additional response actions in accordance with the provisions and schedules

contained therein. In the case of additional response actions required for the Lowered Water Table Component of the Zone 1 Dewatering System only, Settling Defendants' obligation to design and install any additional extraction wells will not increase the length of time they are otherwise required to operate and maintain that system under Section 2.3.5 of the Statement of Work, except as may be necessary to demonstrate that any new extraction wells conform to the plan for the additional response actions.

17. Any additional response actions that Settling Defendants propose are necessary to meet the Performance Standards, re-establish compliance with a Performance Standard, or satisfy any other requirement or obligation undertaken by Settling Defendants in the Statement of Work shall be subject to approval by EPA pursuant to Section XI (Submission Requiring Agency Approval) and, if approved by EPA (after seeking review and comment by DTSC), shall be completed by Settling Defendants in accordance with approved plans, specifications, and schedules.

18. Settling Defendants may invoke the procedures set forth in Section XVIII (Dispute Resolution) to dispute EPA's determination that additional response actions are necessary to meet Performance Standards, re-establish Performance Standards, or to satisfy any other requirements or obligations undertaken by Settling Defendants in the Statement of Work. Such a dispute shall be resolved pursuant to Paragraphs 66 through 71 of this Consent Decree.

VIII. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

19. Settling Defendants shall use quality assurance, quality control, and chain of custody procedures for all samples in accordance with the guidelines identified in Section 3.4 of the Statement of Work, and subsequent amendments to such guidelines upon notification by EPA to Settling Defendants of such amendments. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any sampling, analyzing, or monitoring project under this Consent Decree and in accordance with the schedule in the Statement of Work, Settling Defendants shall submit for EPA's approval (after seeking review and comment by DTSC) a Quality Assurance Project Plan ("QAPP") that is consistent with the Statement of Work, the NCP, and applicable guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Decree. Settling Defendants shall ensure that EPA and DTSC personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Defendants in implementing this Consent Decree. In addition, Settling Defendants shall ensure that such laboratories shall analyze all samples submitted in connection with the Work pursuant to the approved QAPP for quality assurance monitoring. Settling Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Consent Decree perform all analyses according to

accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis" and the "Contract Lab Program Statement of Work for Organic Analysis," dated February 1988, and any amendments made thereto during the course of the implementation of this Decree. Settling Defendants shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Decree participate in an EPA or EPA-equivalent QA/QC program.

20. Upon request, the Settling Defendants shall allow split or duplicate samples to be taken by EPA and DTSC or their authorized representatives. Settling Defendants shall notify EPA and DTSC not less than 28 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA and DTSC shall have the right to take any additional samples that EPA or DTSC deem necessary. Upon request, EPA and DTSC shall allow the Settling Defendants to take split or duplicate samples of any samples taken as part of EPA's or DTSC's oversight of the Settling Defendant's performance of the Work.

21. Unless specified otherwise in an approved deliverable under the Statement of Work, Settling Defendants shall submit to EPA and DTSC two (2) copies each of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Defendants with respect to the Site and/or the implementation of this Consent Decree. EPA and DTSC shall, upon written request, provide to Settling Defendants copies of their

results from any split or duplicate samples taken pursuant to Paragraph 20.

22. Notwithstanding any provision of this Consent Decree, the United States and the State hereby retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS

23. a. Commencing upon the date of lodging of this Consent Decree, the Settling Defendants agree to provide the United States, DTSC, and their representatives, including EPA, DTSC, and their contractors, access at all reasonable times to any property not owned by the State to which access is required for the implementation of this Consent Decree, including, but not limited to, access for the following activities:

i. Monitoring the Work;

ii. Verifying any data or information submitted to the United States or the State;

iii. Conducting investigations relating to contamination at or near the Site;

iv. Obtaining samples;

v. Assessing the need for, planning, or implementing additional response actions at or near the Site;

vi. Inspecting or copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents, consistent with Section XXIV;

vii. Assessing Settling Defendants' compliance with this Consent Decree.

b. To the extent that access to any property is required for the implementation of this Consent Decree and such property is owned or controlled by persons other than Settling Defendants, Settling Defendants shall use best efforts to secure from such persons access for Settling Defendants, as well as for the United States and the State and their representatives, including, but not limited to, their contractors, as necessary to effectuate this Consent Decree. For purposes of this Paragraph, "best efforts" includes the payments of reasonable sums of money in consideration of access. If any access required to complete the Work is not obtained within forty five (45) days of the date of lodging of this Consent Decree, or within forty five (45) days of the date EPA notifies the Settling Defendants in writing that additional access beyond that previously secured is necessary, Settling Defendants shall promptly notify, in writing, EPA and DTSC, and shall include in that notification a summary of the steps Settling Defendants have taken to attempt to obtain access. The United States or the State may, as it deems appropriate, assist Settling Defendants in obtaining access. Settling Defendants shall reimburse the United States in accordance with the procedures in Section XV (Reimbursement of Response Costs), for all costs incurred by the United States in obtaining access. Pursuant to Paragraph 84, the State reserves its rights to seek reimbursement for such costs, and Settling Defendants reserve their rights to oppose such

reimbursement to the State and to seek reimbursement from the State for any costs paid by Settling Defendants for access.

c. The Settling Defendants may seek relief under the provisions of Section XVII (Force Majeure) of this Consent Decree for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any access required for the Work.

24. Notwithstanding any provision of this Consent Decree, the United States and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

25. The Settling Defendants reporting requirements are specified in the attached Statement of Work at Appendix A. Unless otherwise specified in the Statement of Work, an approved deliverable under the Statement of Work, or in writing by EPA, Settling Defendants shall submit to EPA and the State three (3) copies each of all deliverables. One (1) copy of all final deliverables shall be sent to each counsel for the Intervenors in this action and to the Stringfellow Information Center in Riverside County, California. In addition to the foregoing, Settling Defendants shall supply 15 copies of all final deliverables to DTSC for its distribution to the Community.

26. Settling Defendants shall submit to EPA and DTSC three (3) copies each of all plans, reports, designs, and data

required by the Statement of Work, the Work Plan, or any other approved plans in accordance with the schedules set forth in such plans.

27. Upon the occurrence of any event during performance of the Work that Settling Defendants are required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA), Settling Defendants shall within 24 hours of the on-set of such event orally notify the EPA Project Coordinator (or the Alternate EPA Project Coordinator in the event of the unavailability of the EPA Project Coordinator), and the DTSC Project Coordinator (or Alternate DTSC Project Coordinator in the event of the unavailability of the DTSC Project Coordinator). In the event that neither the EPA Project Coordinator nor the EPA Alternate Project Coordinator is available, the Settling Defendants shall notify the Emergency Response Section, Region IX, United States Environmental Protection Agency. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

28. Within twenty (20) days of the on-set of such an event, Settling Defendants shall furnish to EPA and DTSC a written report, signed by the Settling Defendants' Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within thirty (30) days of the conclusion of such an event, Settling Defendants shall submit to EPA and DTSC a report setting forth all actions taken in response thereto.

29. All reports and other documents submitted by Settling Defendants to EPA and DTSC which purport to document Settling Defendants' compliance with the terms of this Consent Decree shall be signed by an authorized representative of the Settling Defendants.

XI. SUBMISSIONS REQUIRING AGENCY APPROVAL

30. After submission of any plan, report, design, or other item that requires approval pursuant to this Consent Decree, EPA (after seeking review and comment by DTSC) shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) disapprove, in whole or in part, the submission, directing that the Settling Defendants modify the submission; or (d) any combination of the above.

31. In the event of approval or approval upon conditions by EPA, pursuant to Paragraph 30(a) or (b), Settling Defendants shall proceed to take any action required by the plan, report, design, or other item, as approved by EPA, subject only to their right to invoke the Dispute Resolution procedures set forth in Section XVIII (Dispute Resolution) with respect to the modifications required or conditions imposed by EPA. In the event that EPA requires modification of a submission to cure the deficiencies pursuant to Paragraph 30(c) and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XIX.

32. a. Upon receipt of a notice of disapproval pursuant to Paragraph 30(c), Settling Defendants shall, within fourteen (14)

days (if practicable), or such other period specified in the Statement of Work or in the notice, correct the deficiencies and resubmit the plan, report, design, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XIX, shall accrue during the 14-day period or otherwise specified period, but shall not be payable unless the resubmission is disapproved or required to be modified due to a material defect as provided in Paragraph 30.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 30(c), Settling Defendants shall proceed, at the direction of EPA (after consultation with DTSC), to take any action required by any non-deficient portion of the submission, as long as such action is not precluded or rendered impracticable by the disapproved portion. Implementation of any non-deficient portion of a submission shall not relieve Settling Defendants of any liability for stipulated penalties under Section XIX (Stipulated Penalties).

33. In the event that a resubmitted plan, report, design, or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Defendants to correct the deficiencies, in accordance with the preceding Paragraphs.

34. If upon resubmission, a plan, report, design, or other item is disapproved by EPA due to a material defect, Settling Defendants shall be deemed to have failed to submit such plan, report, design, or other item timely and adequately unless the Settling Defendants invoke the dispute resolution procedures set

forth in Section XVIII (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XVIII (Dispute Resolution) and Section XIX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XIX.

35. All plans, reports, designs, and other items required to be submitted to EPA under this Consent Decree shall, upon approval by EPA, be enforceable under this Consent Decree. In the event EPA approves or requires Settling Defendants to modify a portion of a plan, report, design, or other item required to be submitted to EPA under this Consent Decree, the approved or modified portion shall be enforceable under this Consent Decree.

XII. PROJECT COORDINATORS

36. Within twenty (20) days of lodging this Consent Decree, Settling Defendants, DTSC and EPA will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least five (5) working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Defendants' Project Coordinator shall be subject to disapproval by

EPA (after consultation with DTSC) within thirty (30) days of notice of the Project Coordinator's selection, and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. EPA's disapproval of the Settling Defendants' Project Coordinator may not be unreasonably exercised. The Settling Defendants' Project Coordinator shall not act as an attorney for any of the Settling Defendants in this matter, although he or she may have a law degree. He or she may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of the Work under this Consent Decree.

37. EPA and DTSC may designate other representatives, including, but not limited to, EPA and State employees, and federal and State contractors and consultants, to observe and monitor the progress of any Work undertaken pursuant to this Consent Decree. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager (RPM) and an On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. In addition, EPA's and DTSC's Project Coordinators or Alternate Project Coordinators shall have authority, consistent with the National Contingency Plan or applicable state law, to halt any Work required by this Consent Decree and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to release or threatened release of Waste Material.

XIII. CERTIFICATION OF COMPLETION

38. Completion of the Work.

Not less than one hundred and twenty (120) days prior to the date Settling Defendants complete, or reasonably anticipate that they will complete, site activities required under an Element of Work, Settling Defendants shall send EPA written notice stating the day on which Settling Defendants believe their obligation to perform under that Element of Work will terminate. After completion of all site activities required for an Element of Work, Settling Defendants shall submit to EPA and DTSC a Completion of Work Report in accordance with Sections 4.0 and 5.0 of the Statement of Work. The Completion of Work Report shall contain the following statement, signed by Settling Defendants' Project Coordinator or a responsible corporate official of a Settling Defendant representing all of the Settling Defendants:

> "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Written acceptance of a Completion of Work Report by EPA (after an opportunity for review and comment by DTSC), shall be deemed to be EPA's certification that such Element of Work has been fully performed in accordance with this Consent Decree. Certification of Completion of any or all Elements of Work shall not affect Settling Defendants' other obligations under this Consent Decree.

XIV. EMERGENCY RESPONSE

39. In the event that any action or occurrence arising out of the performance of the Work causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Settling Defendants shall, subject to Paragraph 40, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify EPA's Project Coordinator (or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator) and the DTSC's Project Coordinator (or if the Project Coordinator is unavailable, DTSC's Alternate Project Coordinator). If neither the EPA Project Coordinator nor the EPA Alternate Project Coordinator is available, the Settling Defendants shall notify the EPA Emergency Response Section, Region IX. Settling Defendants shall take such actions in consultation with EPA's and DTSC's Project Coordinators, or other available authorized EPA officer, and in accordance with all applicable provisions of the Health and Safety Plans and any other applicable plans or documents developed pursuant to the Statement of Work. In the event that Settling Defendants fail to take appropriate response action as required by this Section, EPA or DTSC may take such action instead. Settling Defendants shall reimburse EPA for all costs of the response action not inconsistent with the NCP pursuant to Section XV (Reimbursement of Response Costs). In the event such response action is taken by the State, the State reserves its rights to seek to recover its response costs from

Settling Defendants in this or another action, and Settling Defendants reserve their rights to oppose such State action.

40. Nothing in the preceding Paragraph or in this Consent Decree shall be deemed to limit any authority of the United States, or the State, to take, direct, or order all appropriate action or to seek an order from the Court to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site.

XV. REIMBURSEMENT OF RESPONSE COSTS

41. The United States has incurred, and continues to incur, costs in connection with response actions at the Site. The United States and the Settling Defendants intend, through this Consent Decree, to: (a) resolve claims by the United States for recovery of certain response costs by specifying the principal amount of identified response costs incurred prior to the lodging of this Consent Decree, and by providing the mechanism for entry of a judgment against Settling Defendants for such costs; and (b) provide a mechanism for the resolution and payment of certain costs that will be incurred after the lodging of this Consent Decree.

42. Pursuant to the Stipulation, Recommendation of Special Master and Order, adopted and entered by this Court on September 9, 1991 (the "Stipulation"), the United States provided the defendants with information about certain response costs incurred by the United States. (A copy of the Stipulation is attached hereto as Appendix C and is incorporated by reference.) These costs were identified and summarized in the Response of

Plaintiff United States to Defendant Montrose Chemical Corporation of California's First Set of Interrogatories Numbers 1 and 2, served April 1, 1991 (the "Response to Interrogatories"). The United States and Settling Defendants subsequently agreed that, pursuant to CERCLA Section 107, 42 U.S.C. § 107, and in accordance with the terms of the Stipulation, the United States is entitled to recover from Settling Defendants $47,000,000, exclusive of interest, for the costs identified in the Response to Interrogatories.

43. The United States also provided the Settling Defendants with the United States' Stringfellow Cost Update, dated March 19, 1992 (revised March 25, 1992)(the "Cost Update") that identifies and/or summarizes additional response costs incurred by the United States in connection with the Site, which costs total $11,368,313.13, exclusive of interest. The Cost Update also accounts for certain funds provided by the United States Air Force totalling $5,261,701.26 that have been, or will be, used for response actions at the Site. The Cost Update reflects a reduction in the United States' claim for recovery of the costs identified in both the Response to Interrogatories and the Cost Update by $3,400,847, which is the amount of such costs actually paid for with funds provided by the Air Force. Expenditures of the remaining $1,860,855 in funds provided by the Air Force will be reflected, as appropriate, in the Final Past Cost Update pursuant to Paragraph 47, or in any affected Demand for Payment of Future Response Costs under Paragraph 52.

44. The United States and Settling Defendants now agree that, notwithstanding any previous agreement, the United States is entitled to recover pursuant to CERCLA Section 107, 42 U.S.C. § 9607 and in accordance with Paragraph 50, a total of $ 56,679,232.19 exclusive of interest, for the costs identified in the Response of Plaintiff United States to Defendant Montrose Chemical Corporation of California's First Set of Interrogatories Numbers 1 and 2, and the Stringfellow Cost Update.

45. Pursuant to 42 U.S.C. § 9607(a), the United States is entitled to recover prejudgment interest on the total amount of response costs identified in Paragraph 44, and on those costs determined pursuant to Paragraph 47, below. Such prejudgment interest has accrued, or will accrue, from the later of the date the Complaint was filed in this action (April 21, 1983) or the date the cost was incurred. The United States and the Settling Defendants agree that for the costs identified in Paragraphs 42 and 43, the total amount of prejudgment interest that the United States is entitled to recover as of February 29, 1992, is $ 22,626,305.46 and $869,046.57 respectively, totalling $23,495,352.03. The total of the response costs specified in Paragraph 44, plus prejudgment interest on such costs as of February 29, 1992 is $80,174,584.22. This amount shall be referred to in this Consent Decree as the United States' Liquidated Past Costs.

46. The Parties agree, and the Court finds, that all costs encompassed within the United States' Liquidated Past Costs

are response costs that were incurred in a manner consistent with the NCP.

47. Subsequent to the entry of this Consent Decree, the United States will send to Settling Defendants a final update of past response costs (the "Final Past Cost Update"), accompanied at a minimum by supporting documentation of the type provided with the Stringfellow Cost Update, that have been incurred through the date this Consent Decree was lodged but not included within the Liquidated Past Costs. This Final Past Cost Update will include costs incurred by the United States in connection with the Site and prejudgment interest on such costs through the date of lodging. (In the case of costs incurred for United States and State personnel, the Final Past Cost Update will include costs incurred through the pay period that includes the date of lodging.) Settling Defendants may object to any cost identified in the Final Past Cost Update if they determine that the United States has made an accounting error or if they allege that a cost item that is included represents costs that are inconsistent with the NCP. Such objection shall be made in writing within sixty (60) days of receipt of the Final Past Cost Update and must be sent to the United States, EPA, and EPA Office of Regional Counsel pursuant to Section XXV (Notices and Submissions). Any such objection shall specifically identify the contested response cost and the basis for objection. The Settling Defendants shall then initiate the Dispute Resolution procedures in Section XVIII (Dispute Resolution). Failure to object to any cost or to initiate the dispute resolution procedure shall be deemed to be an

admission that the costs identified in the Final Past Cost Update are consistent with the NCP and that the amount is accurate. In the event that Settling Defendants do not contest any cost identified in the Final Past Cost Update, or after final resolution of any dispute resolution concerning such costs, either the United States or the Settling Defendants may request entry of an order by this Court establishing the amount of costs in the Final Past Cost Update for which the United States is entitled to judgment pursuant to Paragraph 50. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVIII (Dispute Resolution) shall be the exclusive mechanism for resolving disputes regarding the Settling Defendants' obligation to reimburse the United States for costs identified in the Final Past Cost Update.

48. Interest will continue to accrue on the United States' Liquidated Past Costs from March 1, 1992, and on the costs determined pursuant to Paragraph 47, from the date of lodging of this Consent Decree, until the entire amount is paid. Interest on these sums shall accrue at the rate established pursuant to 42 U.S.C. § 9607(a), or any subsequently enacted superseding provision of law.

49. The amount of (a) the United States' Liquidated Past Costs specified in Paragraph 45, (b) the costs plus interest reduced to a sum certain pursuant to Paragraph 47, and (c) the additional interest that has accrued on the sum in Paragraph 44 through the date of lodging of this Consent Decree pursuant to Paragraph 48,

represent the total amount of response costs incurred by the United States and prejudgment interest on such costs, through the date of lodging of this Consent Decree. Notwithstanding the preceding sentence, with respect to (a) costs or damages incurred in connection with Hendler v. United States, Ct. Cl. Civ. No. 456-84L, and (b) any monies that the United States reimburses to the State subsequent to the lodging of this Consent Decree as an adjustment to the State's funding obligations (e.g. advance match) under the Stringfellow cooperative agreement entered into by EPA and the State, the United States reserves all rights to seek to recover such costs from Settling Defendants regardless of when the costs were incurred, and Settling Defendants reserve their rights to oppose the United States' efforts to recover such costs. To the extent that EPA, prior to entry of judgment pursuant to Paragraph 50, disallows any contractor costs included within the costs that are covered by this Paragraph on the basis of fraud or erroneous charging, then the costs covered by this Paragraph shall be reduced accordingly.

50. The United States shall be entitled to entry and enforcement of a judgment jointly and severally against the Settling Defendants for (a) the United States' Liquidated Past Costs specified in Paragraph 45; (b) costs plus interest reduced to a sum certain pursuant to Paragraph 47; and (c) interest accrued pursuant to Paragraph 48, under the same terms and conditions as specified for enforcement of a judgment for "cost claims resolved pursuant to [Paragraph 22 of the Stipulation]," and the provisions of Paragraphs 26, 27, 28, and 29 of the Stipulation. This agreement to condition

the timing of entry and enforcement of a judgment for costs included within the preceding sentence on the terms specified in the Stipulation does not create any right in Settling Defendants to raise any challenge to such costs other than as provided in Paragraph 47 of this Consent Decree regarding the Final Past Cost Update. In addition, this agreement applies only to entry and enforcement of a judgment for those costs and interest included in the first sentence of this Paragraph, and does not affect either the United States' or Settling Defendants' rights with respect to any claims for reimbursement of other response costs.

51. Except as provided in this Paragraph, Settling Defendants shall reimburse the United States as provided in Paragraph 52, for all Future Response Costs, which are not inconsistent with the National Contingency Plan, that the United States incurs commencing with the date of lodging of this Consent Decree and concluding with the date EPA accepts Settling Defendants' last Completion of Work Report pursuant to Sections 4.0 and 5.0 of the Statement of Work. Settling Defendants are not required, under the terms of this Consent Decree, to reimburse the United States for Future Response Costs incurred by the United States: (a) in implementing any remedial action selected through a Record of Decision issued subsequent to the lodging of this Consent Decree; (b) in providing funds to the State of California through a cooperative agreement, or otherwise, for response actions in connection with the Site, except for the costs of oversight of work performed by Settling Defendants under this Consent Decree and the

Administrative Order on Consent and all subsequent amendments thereto; (c) for operation and maintenance of the Mid-Canyon Pretreatment Plant (including oversight of such activities by the United States Army Corps of Engineers or its successor in this role), and (d) in connection with the claim made in Hendler v. United States Ct. Cl. Civ. No. 456-84L. Pursuant to Paragraph 84, the United States and Settling Defendants reserve all their rights with respect to claims for Future Response Costs included within clauses (a), (b), (c), and (d) of the preceding sentence.

52. a. Payment of the Future Response Costs that Settling Defendants are obligated to pay under Paragraph 51 shall be made in monthly installments with an annual supplemental payment or credit, as appropriate, in the manner described below. Commencing on the first day of the first month following the entry of this Consent Decree and continuing for each of the following eleven (11) months after entry, and for each twelve (12) month period thereafter, Settling Defendants shall pay to the United States in twelve (12) equal installments the estimated annual Future Response Costs that they are obligated to pay under this Consent Decree. Each monthly installment shall be due on the first day of each month. This obligation to make monthly payments shall cease on the date of EPA's written acceptance of Settling Defendants' last Completion of Work Report under Sections 4.0 and 5.0 of the Statement of Work.

b. For the first twelve (12) months after the entry of this Consent Decree, the estimated Future Response Costs are $1,000,000. Thus, Settling Defendants shall, for each of the first

12 months after entry, pay to the United States the sum of $83,333.33. Subsequent to each anniversary of the entry of this Consent Decree, EPA will send to Settling Defendants an itemized statement of Future Response Costs covered by Paragraph 51 incurred by the United States in the preceding twelve (12) months. Transmittal of this statement shall constitute a Demand for Payment for the amount of any Future Response Costs in excess of the amount of Settling Defendants' monthly installments for the covered period. Except as otherwise provided in Paragraph 53, Settling Defendants shall, within sixty (60) days of receipt of the Demand for Payment, pay to the United States any amount in excess of the amount that Settling Defendants have already paid pursuant to this Paragraph during the twelve (12) month period covered by the Demand for Payment. To the extent that the amounts paid by Settling Defendants during the twelve (12) month period exceed the amount of the Demand for Payment, such excess payment shall be a credit toward their payment obligations for Future Response Costs for the following year. This credit shall be applied as a reduction in full of the monthly installment(s) due subsequent to EPA's transmittal of an itemized statement of Future Response Costs that indicates that the Settling Defendants have a credit. Failure to include in any Demand for Payment any Future Response Cost incurred in the covered 12 month period shall not constitute a waiver of the United States' right to collect such costs under the terms of this Consent Decree, and any such costs may be included in a subsequent Demand for Payment.

c. EPA may notify Settling Defendants in writing of a change in the estimate of Future Response Costs for any subsequent twelve (12) month period, or Settling Defendants may request that EPA change the estimate, based upon any relevant factors. Settling Defendants may object to any determination of EPA with respect to the estimate of Future Response Costs in accordance with Section XVIII (Dispute Resolution). If the estimate of Future Response Costs is changed, Settling Defendants shall adjust their monthly payments accordingly for the twelve (12) months covered by the revised estimate of Future Response Costs. Unless and until EPA changes the estimate of Future Response Costs, Settling Defendants shall continue to pay at the previous monthly amount. To the extent that Settling Defendants' payments under this Paragraph exceed the total amount of Future Response Costs they are obligated to pay pursuant to Paragraph 51, they shall receive full credit towards their ultimate liability in this action for such sums paid. Settling Defendants shall make all payments pursuant to this Paragraph in the manner described in Paragraph 55.

53. Settling Defendants may object to payment of any Future Response Costs demanded pursuant to Paragraph 52 if they determine that the United States has made an accounting error, if they allege that a cost item that is included represents costs that are inconsistent with the NCP, or if they allege that a cost item is not included within those Future Response Costs that they are required to pay under Paragraph 51. Such objection shall be made in writing within sixty (60) days of receipt of the Demand for Payment

and must be sent to the United States, EPA, and EPA Office of Regional Counsel pursuant to Section XXV (Notices and Submissions). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection the Settling Defendants shall, within the sixty (60) day period, pay all uncontested Future Response Costs to the United States in the manner described in Paragraph 55. Simultaneously, the Settling Defendants shall initiate the Dispute Resolution procedures in Section XVIII (Dispute Resolution) for any costs to which they object. If the United States prevails in the dispute, within 60 days of the resolution of the dispute, the Settling Defendants shall pay the sums due (with accrued interest) to the United States in the manner described in Paragraph 55. If the Settling Defendants prevail concerning any aspect of the contested costs, the Settling Defendants shall pay, within sixty (60) days of the final decision, that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States in the manner described in Paragraph 55. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XVIII (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Defendants' obligation to reimburse the United States for its Future Response Costs that are covered by this Consent Decree.

54. In the event that the monthly payments required by Paragraph 52 are made by the due date and annual adjustment payments are made within sixty (60) days of the Settling Defendants' receipt

of the Demand for Payment, Settling Defendants shall not pay prejudgment interest on the Future Response Costs. If a monthly payment is not made by the due date or an annual adjustment payment is not made within sixty (60) days of the receipt of the Demand for Payment, then prejudgment interest on any unpaid amounts shall accrue at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607. The interest shall begin to accrue on the date of the Settling Defendants' receipt of the Demand for Payment or the date a monthly payment is due, respectively, but there shall not be any interest for the period from the time the cost was incurred until the date of the transmittal of the Demand for Payment or the date a monthly payment was due. Interest shall accrue at the rate specified through the date of Settling Defendants' payment. Payments of interest made under this Paragraph shall be in addition to remedies or sanctions available to the United States by virtue of Settling Defendants' failure to make timely payments under this Section.

55. Payments to the United States for Past Response Costs shall be made by Electronic Funds Transfer ("EFT" or wire transfer) and payments of Future Response Costs and stipulated penalties, if any, shall be made by either EFT or certified check in accordance with instructions provided by the United States to the Settling Defendants subsequent to the lodging of this Consent Decree. All payments under this Consent Decree shall reference the CERCLA Number CAT 080012826 and the U.S.A.O. file number 82-22-418. Any EFTs received after 11:00 A.M. (Eastern Time) will be credited on the

next business day. Settling Defendants shall, within five (5) days of the wire transfer of funds or payment by certified check, send written notice of such transfer or a copy of the check to the United States, EPA, and EPA Office of Regional Counsel as specified in Section XXV (Notices and Submissions).

56. Settling Defendants agree that (a) all funds in the escrow account established by certain defendants pursuant to Paragraph III.G of the Administrative Order on Consent, (b) all funds received by EPA from the United States Air Force referred to in Paragraph 43 that have not been expended, and (c) any funds received through a settlement with General Steel & Wire Co., Inc. may be used by the United States or the State, as applicable, for any lawful purpose relating to the Site, and in any lawful manner, including but not limited to payment or reimbursement of costs that Settling Defendants have not agreed to pay under this Consent Decree. In the event, however, that the United States and the State enter into a settlement agreement with General Steel & Wire Co., Inc., then Settling Defendants reserve their rights (a) to oppose the settlement based upon the amount of General Steel and Wire's payment, and (b) to raise any issue as to who should receive credit for funds received in such settlement and Plaintiffs reserve their rights to oppose any position taken by Settling Defendants' on this issue. To the extent that the United States may in the future receive any other funds from other responsible parties, Settling Defendants reserve all rights that they may have to object to

(a) settlements that are the basis for such funds, and (b) the use to be made of such funds.

57. For the purposes of this Consent Decree a cost will be deemed to have been incurred as follows: (a) direct and indirect costs for work performed by United States and State personnel (e.g. payroll, benefits, travel, overhead, etc.) are incurred on the date the work was actually performed; and (b) any other cost is incurred on the date payment is made to a provider of goods or services by either the United States or the State. For purposes of computing prejudgment interest on costs incurred for work performed by United States or State personnel under (a) above, interest shall begin to accrue on the last day of the relevant pay period.

XVI. INDEMNIFICATION, ASSIGNMENT OF RIGHTS, AND INSURANCE

58. Neither the United States nor the State assume any liability by entering into this Consent Decree or the Administrative Order on Consent, or by virtue of any designation of Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Settling Defendants shall indemnify, save and hold harmless the United States, the State, and their officials, agents, employees, contractors, subcontractors, or representatives for or from any and all claims or causes of action arising from, or on account of, acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree or the Administrative Order on Consent, including, but not limited to, any

claims arising from any designation of Settling Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Defendants agree to pay the United States and the State all costs the Plaintiffs incur including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States or the State based on acts or omissions of Settling Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Decree or the Administrative Order on Consent. Neither the United States nor the State shall be held out as a party to any contract entered into by or on behalf of Settling Defendants in carrying out activities pursuant to this Consent Decree or the Administrative Order on Consent. Neither the Settling Defendants nor any such contractor shall be considered an agent of the United States or the State.

59. Settling Defendants waive all claims against the United States and the State for damages or reimbursement or for set-off of any payments made or to be made to the United States or the State, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Defendants shall indemnify and hold harmless the United States and the State with respect to any and all

claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Defendants and any person for performance of work on or relating to the Site, including, but not limited to, claims on account of construction delays.

60. To the extent that DTSC or its predecessor has previously entered into contracts for work on the Site which hereafter requires maintenance under the Statement of Work, the said Agency hereby assigns to Settling Defendants, during the period of time that Settling Defendants are performing Site maintenance under the Statement of Work, all rights under said contracts pertaining to defects in workmanship or materials, including but not limited to warranty rights and rights of action arising out of any breach of said contracts, to the extent that such rights may lawfully be assigned. The United States makes no assignment of any rights to Settling Defendants.

61. No later than fifteen (15) days before commencing any on-site Work, Settling Defendants shall secure, and shall maintain until the later of the first anniversary of EPA's Certification of Completion of the Work pursuant to Paragraph 38, Section XIII (Certification of Completion) or completion of activities conducted under the Administrative Order on Consent, comprehensive general liability insurance and automobile insurance with limits of $500,000 per occurrence, combined single limit, naming as additional insureds the United States and the State. In addition, for the duration of this Consent Decree, Settling Defendants shall satisfy, or shall

ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing work on behalf of Settling Defendants in furtherance of this Consent Decree or the Administrative Order on Consent. Prior to commencement of work under this Consent Decree or the Administrative Order on Consent, Settling Defendants shall provide to EPA and DTSC certificates of such insurance and a copy of each insurance policy. Settling Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the effective date of this Consent Decree. If Settling Defendants demonstrate by evidence satisfactory to EPA (after consultation with DTSC) that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendants need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XVII. FORCE MAJEURE

62. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of the Settling Defendants or of any entity controlled by Settling Defendants, including, but not limited to, their contractors and subcontractors, that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendants' best efforts to fulfill the obligation. The requirement that the Settling Defendants exercise "best efforts to fulfill the

obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards.

63. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, whether or not caused by a force majeure event, the Settling Defendants shall notify orally EPA's Project Coordinator (or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Deputy Director of the Superfund Program, EPA Region IX), and the DTSC Project Coordinator (or in his/her absence the DTSC Alternate Project Coordinator) within seventy two (72) hours of when Settling Defendants or their Project Coordinator first knew or should have known that the event might cause a delay. Within ten (10) days thereafter, Settling Defendants shall provide in writing to EPA and DTSC an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Defendants' rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to whether,

in the opinion of the Settling Defendants, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude Settling Defendants from asserting any claim of force majeure for that event. Settling Defendants shall be deemed to have notice of any circumstance of which their contractors or subcontractors had or should have had notice.

64. If EPA (after seeking review and comment by the DTSC) agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA (after seeking review and comment by DTSC) does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the Settling Defendants in writing of its decision. If EPA (after seeking review and comment by DTSC) agrees that the delay is attributable to a force majeure event, EPA will notify the Settling Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

65. If the Settling Defendants elect to invoke the dispute resolution procedures set forth in Section XVIII (Dispute Resolution), they shall do so no later than fifteen (15) days after receipt of EPA's notice. In any such proceeding, Settling Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Defendants complied with the requirements of Paragraphs 63 and 64, above. If Settling Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Settling Defendants of the affected obligation of this Consent Decree identified to EPA and the Court.

XVIII. DISPUTE RESOLUTION

66. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree and the Statement of Work, regardless of whether the paragraph at issue expressly refers to the dispute resolution mechanism. In this regard, these procedures shall be applicable, inter alia, to the issue of whether a Performance Standard has been met. However, the procedures set forth in this Section shall not apply to actions by the United States or the State to enforce obligations of the Settling

Defendants that have not been disputed in accordance with this Section.

67. Any dispute which arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between Settling Defendants and EPA. The period for informal negotiations shall not exceed twenty (20) days from the time the dispute arises, unless it is modified by written agreement of Settling Defendants and EPA. The dispute shall be considered to have arisen when Settling Defendants send EPA a written Notice of Dispute.

68. a. In the event that the Settling Defendants and EPA cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA (after consultation with DTSC) shall be considered binding unless, within ten (10) days after the conclusion of the informal negotiation period, Settling Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States, EPA, the State, and DTSC a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Defendants. The Statement of Position shall specify the Settling Defendants' position as to whether formal dispute resolution should proceed under Paragraph 69 or 70.

b. Within fourteen (14) days after receipt of Settling Defendants' Statement of Position, EPA will serve on Settling Defendants its Statement of Position, including, but not

limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 69 or 70.

c. If there is disagreement between EPA and the Settling Defendants as to whether dispute resolution should proceed under Paragraph 69 or 70, the Settling Defendants and EPA shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if the Settling Defendants ultimately appeal to the Court to resolve the dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 69 and 70.

69. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Decree; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by Settling Defendants regarding the validity of the 1990 ROD.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to Paragraphs 67 and 68. Where appropriate, EPA may allow submission of supplemental statements of position by the Settling Defendants and EPA to be added to the administrative record.

b. EPA's Deputy Director for Superfund, EPA Region IX, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 69.a. This decision shall be binding upon the Settling Defendants, subject only to the right to seek judicial review pursuant to Paragraph 69.c. and 69.d.

c. Any administrative decision made by EPA pursuant to Paragraph 69.b. shall be reviewable by this Court, provided that a notice of judicial appeal is filed by the Settling Defendants with the Court and served on all Parties within fifteen (15) days of receipt of EPA's decision. The notice of judicial appeal shall include a description of the matter in dispute, the efforts made by the Settling Defendants and EPA to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Decree. The United States and the State may file a response to Settling Defendants' notice of judicial appeal.

d. In proceedings on any dispute governed by this Paragraph, Settling Defendants shall have the burden of demonstrating that the decision of EPA's Deputy Director for

Superfund is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraphs 69.a.

70. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Defendants' Statement of Position submitted pursuant to Paragraph 68, EPA's Deputy Director for Superfund, EPA Region IX, will issue a final decision resolving the dispute. The Deputy Director's decision shall be binding on the Settling Defendants unless, within fifteen (15) days of receipt of the decision, the Settling Defendants file with the Court and serve on the Parties a notice of judicial appeal setting forth the matter in dispute, the efforts made by the Settling Defendants and EPA to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States and the State may file a response to Settling Defendants' notice of judicial appeal.

b. Notwithstanding anything to the contrary in this Consent Decree, judicial review of any dispute governed by this Paragraph shall be governed by applicable provisions of law.

71. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect

in any way any obligation of the Settling Defendants under this Consent Decree not directly in dispute, unless EPA (after consultation with DTSC) or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 80. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that the Settling Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIX (Stipulated Penalties). If the Settling Defendants prevail, stipulated penalties shall not be paid.

XIX. STIPULATED PENALTIES

72. Settling Defendants shall be liable to the United States for stipulated penalties in the amounts set forth in Paragraphs 73 and 74 for failure to comply with the requirements of this Consent Decree specified in Paragraphs 73 and 74, unless excused under Section XVII (Force Majeure), or pursuant to Section XVIII (Dispute Resolution). "Compliance" by Settling Defendants shall include submission of Deliverables and completion of the activities under this Consent Decree in the manner, and within, the time established by, and/or approved under, this Consent Decree.

73. a. The following stipulated penalties shall be payable per violation per day to the United States for any

noncompliance identified in Subparagraph b:

Penalty Per Violation Per Day	Period of Noncompliance
i. $ 1,000	Day 1 through 5
ii. $ 5,000	Day 6 through 10
iii. $10,000	Day 11 and each day thereafter

b. i. Begin installation of facilities for all Zone 1 Dewatering System Components.

ii. Complete installation and commence operation of all Zone 1 Dewatering System Components.

iii. Commence construction of facilities to determine achievement of Performance Standard for Bedrock Hydraulic Control Component.

iv. Complete construction of facilities to determine achievement of Performance Standard for Bedrock Hydraulic Control Component.

v. Commence operation of the Interim Control Component

vi. Complete installation and commence operations of Hydraulic Control and Treatment and Disposal Components.

vii. Commence Routine Groundwater Monitoring.

viii. Commence Routine Site Maintenance activities.

ix. Submit notification(s) required by the first sentence of Paragraph 38.

74. The following stipulated penalties shall be payable per violation per day to the United States for failure to (1) submit

Deliverables as required in the Statement of Work, or (2) comply with any provision of an approved Work Plan, Final Design, Health and Safety Plan, Sampling and Analysis Plan, or other approved plan or report, with the exception of any noncompliance that is covered in Paragraph 73.

	Penalty Per Violation Per Day	Period of Noncompliance
i.	$ 500	Day 1 through 5
ii.	$ 2,500	Day 6 through 10
iii.	$ 5,000	Day 11 and each day thereafter

75. In the event that EPA or DTSC assumes performance of a portion or all of the Work pursuant to Paragraph 85 of Section XX (Covenants Not to Sue by Plaintiffs), Settling Defendants shall be liable for a stipulated penalty in the amount of three times the cost incurred by EPA or DTSC to perform the Work.

76. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

77. Following EPA's determination that Settling Defendants have failed to comply with a requirement of this Consent Decree, EPA may give Settling Defendants written notification of the same and describe the noncompliance. EPA may send the Settling Defendants a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding

Paragraph regardless of whether EPA has notified the Settling Defendants of a violation.

78. All penalties owed to the United States under this Section shall be due and payable within thirty (30) days of the Settling Defendants' receipt from EPA of a demand for payment of the penalties, unless Settling Defendants invoke the Dispute Resolution procedures under Section XVIII (Dispute Resolution). All payments under this Section shall be paid by certified check made payable to "EPA Hazardous Substances Superfund," and shall be paid as provided in Paragraph 55. Copies of check(s) paid pursuant to this Section, and any accompanying transmittal letter(s), shall be sent to the United States and EPA as provided in Section XXV (Notices and Submissions).

79. The payment of penalties shall not alter in any way Settling Defendants' obligation to complete the performance of the Work required under this Consent Decree.

80. Penalties shall continue to accrue as provided in Paragraph 72 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA within fifteen (15) days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Defendants

shall pay all accrued penalties determined by the Court to be owed to EPA within sixty (60) days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the District Court's decision is appealed by Settling Defendants or EPA, Settling Defendants shall pay all accrued penalties determined by the District Court to be owing to the United States into an interest-bearing escrow account within sixty (60) days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every sixty (60) days. Within fifteen (15) days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to Settling Defendants to the extent that they prevail.

81. a. If EPA determines that Settling Defendants have failed to pay stipulated penalties when due, the United States or the State (if EPA has issued written notice to Settling Defendants pursuant to Paragraph 77 that stipulated penalties are due) may institute proceedings to collect the penalties, as well as interest. Stipulated penalties collected by the State shall be paid to the United States as provided herein. Settling Defendants shall pay interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 77 at the rate established pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607.

b. Nothing in this Consent Decree shall be construed as prohibiting, altering, or in any way limiting the ability of the United States or the State to seek any other remedies or sanctions

available by virtue of Settling Defendants' violation of this Decree or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA.

XX. COVENANTS NOT TO SUE BY PLAINTIFFS

82. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants under the terms of this Consent Decree, and except as specifically provided in Paragraphs 84 and 85, the United States covenants not to file any new civil action or to take administrative action against Settling Defendants pursuant to Sections 106 and 107(a) of CERCLA and Section 7003 of RCRA for performance of the Work, or for recovery of Past Response Costs and Future Response Costs to the extent Settling Defendants are obligated to pay such costs under this Consent Decree. These covenants not to sue shall take effect upon entry of this Consent Decree. These covenants not to sue are conditioned upon the complete and satisfactory performance by Settling Defendants of the Work and their other obligations and on payment of Past Response Costs and Future Response Costs as required under this Consent Decree. These covenants not to sue extend only to the Settling Defendants and their successors and do not extend to any other person.

83. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants under the terms of the Consent Decree, and except as specifically provided Paragraphs 84 and 85, the State covenants not

to file any new action or to take administrative action against Settling Defendants for performance of the Work pursuant to Section 107 of CERCLA, 42 U.S.C. § 9607, or California Health and Safety Code Sections 25358.3 and 25360 or any other authority asserted in the Complaint, as amended, in this action. This covenant not to sue shall take effect upon entry of this Consent Decree. These covenants not to sue are conditioned upon the complete and satisfactory performance by Settling Defendants of their obligations under this Consent Decree. These covenants not to sue extend only to the Settling Defendants and their successors, and do not extend to any other person.

84. General reservations of rights.

The covenants not to sue set forth above do not pertain to any matters other than those expressly specified in Paragraphs 82 and 83. This Consent Decree does not resolve any claim by Plaintiffs, except to the extent that claims by the United States for certain response costs are addressed herein, and the Parties expressly agree that it does not effect any release from liability. Nor does this Consent Decree resolve any claims of the Settling Defendants against the United States or the State, and this Consent Decree is without prejudice to Settling Defendants' rights to pursue any claims against the State. The United States and the State reserve, and except as otherwise provided herein Settling Defendants reserve, and this Consent Decree is without prejudice to, all rights and defenses the Parties may have with respect to all other matters,

including but not limited to, the following:

(a) claims based on a failure by Settling Defendants to meet a requirement of this Consent Decree;

(b) liability arising from the past, present, or future disposal, release, or threat of release of Waste Materials outside of the Site;

(c) liability for damages for injury to, destruction of, or loss of natural resources;

(d) liability for response costs that have been or may be incurred by all federal agencies which are trustees for natural resources and which have, or may in the future, spend funds relating to the Site, plus interest;

(e) criminal liability;

(f) liability for violations of federal or state law that occur during or after implementation of the Work;

(g) liability for all additional response actions in connection with the Site that Settling Defendants are not required to undertake as part of the Work under this Consent Decree, including but not limited to, continued operation of systems constructed as part of the Work, other operable units at the Site, and the final response actions selected for the Site; and

(h) liability for the United States' Future Response Costs, plus interest, that are not paid by Settling Defendants under this Consent Decree;

(i) liability for response costs incurred, or to be incurred, by the State of California for past or future response actions, plus interest;

(j) liability for response costs incurred by Settling Defendants, plus interest;

(k) liability for all costs or damages incurred in connection with Hendler v. United States, Ct. Cl. Civ. No. 456-84L, plus interest;

(l) liability for all costs incurred by the United States for any reimbursement to the State as an adjustment to the State's funding obligations (e.g. advance match) under the Stringfellow cooperative agreement entered into by EPA and the State, plus interest; and

(m) liability under any other cause of action asserted in the Complaint, as amended.

85. In the event EPA (after consultation with DTSC) determines that Settling Defendants have failed to implement any provisions of the Work in an adequate or timely manner, EPA or the State may perform any and all portions of the Work as EPA determines necessary. Settling Defendants may invoke the procedures set forth in Section XVIII (Dispute Resolution) to dispute EPA's determination that the Settling Defendants failed to implement a provision of the Work in an adequate or timely manner as arbitrary and capricious or otherwise not in accordance with law. Such dispute shall be resolved on the administrative record. Costs incurred by the United States in performing the Work pursuant to this Paragraph shall be

considered Future Response Costs that Settling Defendants shall pay pursuant to Section XV (Reimbursement of Response Costs). Settling Defendants are not, under the terms of this Consent Decree, required to reimburse the State for costs incurred in performing the Work pursuant to this Paragraph. The State reserves its rights to seek to recover such costs from Settling Defendants, and Settling Defendants reserve their rights to oppose the State's efforts to recover such costs.

86. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all authority and reserve all rights to take any and all response actions authorized by law.

XXI. COVENANTS BY SETTLING DEFENDANTS

87. Except as provided in this Paragraph, Settling Defendants hereby covenant not to sue and agree not to assert any claims or causes of action against the United States with respect to the Site or this Consent Decree, including, but not limited to, any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 111, 112, 113 or any other provision of law, or any claims arising out of response activities at the Site. However, Settling Defendants reserve, and this Consent Decree is without prejudice to, Settling Defendants' rights to pursue: (1) actions against the United States based on negligent actions taken directly by the United States (not including oversight or approval of Settling Defendants plans or

activities) that are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA; and (2) claims against the United States for disposal of hazardous substances by the United States Air Force and/or Navy which have already been asserted in this action. Nothing in this Consent Decree shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

XXII. EFFECT OF SETTLEMENT

88. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this decree may have under applicable law. Each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action which each party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a party hereto.

89. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the

claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XX (Covenants Not to Sue by Plaintiffs).

XXIII. ACCESS TO INFORMATION

90. Settling Defendants shall provide to EPA and DTSC, upon request, copies of all documents and information, unless privileged, within their possession or control or that of their contractors or agents created or generated in the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work or activities conducted under the Administrative Order on Consent. Settling Defendants shall also make available to EPA and DTSC, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

91. a. Settling Defendants may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiffs under this Consent Decree to the extent permitted by, and in accordance with, Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no

claim of confidentiality accompanies documents or information when they are submitted to EPA and the State, or if EPA has notified Settling Defendants that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA, the public may be given access to such documents or information without further notice to Settling Defendants.

b. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege in lieu of providing documents, they shall provide EPA and DTSC with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the terms of the Consent Decree shall be withheld on the grounds that they are privileged.

92. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information generated or created in connection with implementation of the Consent Decree.

XXIV. RETENTION OF RECORDS

93. Until 5 years after the later of completion of the Work or a final non-appealable judgment on, or settlement of, all claims raised in the Complaint in this action, as amended, each Settling Defendant shall preserve and retain all records and documents (not including duplicates) in its possession or control or which come into its possession or control that relate to the performance of the Work to be conducted pursuant to this Consent Decree or the Administrative Order on Consent, or that relate to liability of any person for response actions conducted and to be conducted at the Site, regardless of any corporate retention policy to the contrary. For the same period, Settling Defendants shall also instruct their contractors and agents to preserve all documents (not including duplicates), records, and information of whatever kind, nature or description relating to the performance of the Work or activities conducted under the Administrative Order on Consent.

94. At the conclusion of this document retention period, Settling Defendants shall notify the United States and the State at least ninety (90) days prior to the destruction of any such records or documents, and, upon request by the United States or the State, Settling Defendants shall deliver any such records or documents to EPA or DTSC. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege, they shall provide the Plaintiffs with the following: (1) the title

of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the terms of the Consent Decree shall be withheld on the grounds that they are privileged.

XXV. NOTICES AND SUBMISSIONS

95. Whenever, under the terms of this Consent Decree, written notice is required to be given or a report, deliverable, or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Decree with respect to the United States, EPA, the State, and the Settling Defendants, when sent to the following:

As to the United States:

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Post Office Box 7611
Ben Franklin Station
Washington, D.C. 20044
Re: United States v. Stringfellow, et al.
DOJ File No. 90-11-2-24

As to EPA:

Karen Ueno
EPA Project Coordinator
United States Environmental Protection Agency
Region IX
Mail Stop H-6-1
75 Hawthorne Street
San Francisco, California 94105

As to EPA Office of Regional Counsel:

Laurie Williams
Office of Regional Counsel
United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105
Re: Stringfellow Superfund Site (#9-01)

As to DTSC:

Beth Jines
Department of Toxic Substances Control
State Project Coordinator, Stringfellow
400 P Street, 4th Floor
P.O. Box 806
Sacramento, California 95812-0806

As to the State:

Donald A. Robinson, Esq.
Office of the Attorney General
California Department of Justice
300 South Spring Street
Suite 500
Los Angeles, CA 90013

As to the Settling Defendants:

Dan Bergman
Pyrite Canyon Group
3737 Main Street
Suite 410
Riverside, CA 92501

With courtesy copies to:

John R. Stocker
Rockwell International Corp.
World Headquarters
2201 Seal Beach Blvd.
Seal Beach, CA 90740-8250

and to

Barry P. Goode
McCutchen, Doyle, Brown & Enerson
Three Embarcadero Center
San Francisco, CA 94111

or whomever they may designate in writing.

XXVI. EFFECTIVE DATE

96. The effective date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court, except as otherwise provided herein.

XXVII. RETENTION OF JURISDICTION

97. This Court retains jurisdiction over both the subject matter of this Consent Decree and the Settling Defendants for the duration of the performance of the terms and provisions of this Consent Decree for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Decree, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XVIII (Dispute Resolution) hereof.

XXVIII. APPENDICES

98. The following appendices are attached to and incorporated into this Consent Decree:

"Appendix A" is the Statement of Work.

"Appendix B" is the 1990 ROD.

"Appendix C" is the Stipulation, Recommendation of Special Master and Order adopted and entered by this Court on September 9, 1991.

XXIX. COMMUNITY RELATIONS

99. Settling Defendants shall provide for community relations support activities as set forth in the Statement of Work.

XXX. MODIFICATION

100. Schedules specified in this Consent Decree for completion of the Work may be modified by agreement of EPA (after consultation with DTSC) and the Settling Defendants. All such modifications shall be made in writing.

101. No material modifications shall be made to the Statement of Work without written notification to and written approval of the United States, Settling Defendants, and the Court. Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the Statement of Work that do not materially alter that document may be made by written agreement between EPA (after consultation with DTSC) and Settling Defendants.

102. Nothing in this Decree shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Decree.

XXXI. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

103. This Consent Decree shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding

the Consent Decree disclose facts or considerations which indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Defendants consent to the entry of this Consent Decree without further notice.

104. If for any reason the Court should decline to approve this Consent Decree in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation between the Parties.

XXXII. SIGNATORIES/SERVICE

105. Each undersigned representative of a Settling Defendant to this Consent Decree, the Acting Assistant Attorney General for the Environment and Natural Resources Division of the U.S. Department of Justice, and the Director of the California Environmental Protection Agency, Department of Toxic Substances Control certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind such party to this document.

106. Each Settling Defendant hereby agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified the Settling Defendants in writing that it no longer supports entry of the Consent Decree.

107. Each Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on

behalf of that Party with respect to all matters arising under or relating to this Consent Decree. Settling Defendants hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of process.

SO ORDERED THIS 21st DAY OF October, 1992.

James M. Ideman

United States District Judge

THE UNDERSIGNED PARTIES enter into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR THE UNITED STATES OF AMERICA

Dated: _____

VICKI A. O'MEARA
Acting Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

Dated: 7/16/92

PHILLIP A. BROOKS
Senior Counsel
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

Dated: 7/29/92

LOURDES G. BAIRD
United States Attorney
Central District of California
PETER HSIAO
Assistant United States Attorney
Federal Building
Room 7516
300 North Los Angeles Street
Los Angeles, California 90012
(213) 894-6117

Dated: 7/16/92

HERBERT H. TATE, Jr.
Assistant Administrator for
Enforcement
U.S. Environmental Protection Agency
401 "M" Street, S.W.
Washington, D.C. 20460

Dated: 7/16/92

DOUGLAS P. DIXON
Office of Enforcement
U.S. Environmental Protection Agency
401 "M" Street, S.W.
Washington, D.C. 20460

Dated: 7.16.92

DANIEL W. McGOVERN
Regional Administrator, Region 9
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105

Dated: 7/14/92

JOANNE S. MARCHETTA
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, California 94105
(415) 744-1343

United States v. Stringfellow
Consent Decree Signature Page

FOR THE STATE OF CALIFORNIA

Dated: June 8, 1992

WILLIAM F. SOO HOO
Director, Department of Toxic Substances Control
California Environmental Protection Agency
P.O. Box 806
Sacramento, CA 95812-0806

Dated: June 10, 1992

DONALD A. ROBINSON
Deputy Attorney General
California Department of Justice
300 South Spring Street
Suite 500
Los Angeles, CA 90013
(213) 897-2611

Alumax Inc. enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR ALUMAX INC.

Dated: 6/19/92

R. P. Wolf
Vice President
5655 Peachtree Parkway
Norcross, Georgia 30092

Dated: 6/19/92

Rene P. Tatro, Esq.
Counsel for Alumax Inc.
Heller, Ehrman, White & McAuliffe
333 Bush Street, Suite 2730
San Francisco, CA 94104-2878
(415) 772-6000

The Deutsch Company enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

For THE DEUTSCH COMPANY

Dated: June 18, 1992

Lester Deutsch
Executive Vice President
2444 Wilshire Blvd.
Suite 600
Santa Monica, California 90403

FOLGER & LEVIN

Dated: June 23, 1992

Thomas P. Laffey, Esq.
1900 Avenue of the Stars
Suite 2800
Los Angeles, California 90067

General Electric Company enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

For General Electric Company

Dated: 6/17/92

Robert W. Frantz
Manager and Counsel - Environmental Remediation Program
3135 Easton Turnpike
Fairfield, CT 06431

Dated: 6/24/92

Alan Topol, Esq.
Counsel For General Electric Company
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, DC 20044
(202) 662-6000

McDonnell Douglas Corporation enters into this Consent Decree in the matter of United States v. Stringfellow, et al., dated _____ relating to the Stringfellow Hazardous Waste Superfund Site.

For McDonnell Douglas Corporation

Dated: 5 June 1992

Dan Summers
Assistant General Counsel
McDonnell Douglas Corporation
P.O. Box 516 (MC: 1001240)
St. Louis, MO 63166
(314)233-2089

Dated: 6/24/92

Allan J. Topol
Counsel for McDonnell Douglas Corporation
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, DC 20044

Montrose Chemical Corporation of California enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waster Superfund Site.

FOR MONTROSE CHEMICAL CORPORATION OF CALIFORNIA

Dated: 6/22/92

Frank C. Bachman
Vice President & General Manager
830 Post Road East
Westport, Connecticut 06880

Dated: 6-22-92

David L. Mulliken, Esq.
Latham & Watkins
701 "B" Street, Suite 2100
San Diego, California 92101
(619) 236-1234
Counsel for Montrose Chemical Corporation of California

NI Industries, Inc. enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

For: NI Industries, Inc.

Dated: 6/9/92

David L. Hirsch
Vice President
3030 Old Ranch Parkway, Suite 400
Long Beach, California 90740-2752

Dated: 6/24/92

Counsel for NI Industries, Inc.
Allan J. Topol
Covington & Burling
1201 Pennsylvania Ave., N.W.
Washington, D.C. 20044
(202) 662-6000

Northrop Corporation enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Site.

FOR NORTHROP CORPORATION

Dated: 6/19/92

Richard R. Molleur
Corporate Vice President and
General Counsel
1840 Century Park East
Los Angeles, California 90067

Dated: _____

Peter Taft
Counsel for Northrop Corporation
355 South Grand Avenue, 35th Fl.
Los Angeles, California 90071
(213) 683-9100

Northrop Corporation enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Site.

FOR NORTHROP CORPORATION

Dated: 6/19/92

Richard R. Molleur
Corporate Vice President and
General Counsel
1840 Century Park East
Los Angeles, California 90067

Dated: 6-23-92

Peter Taft
Counsel for Northrop Corporation
355 South Grand Avenue, 35th Fl.
Los Angeles, California 90071
(213) 683-9100

Quantum Chemical Corporation enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow hazardous waste superfund site.

For Quantum Chemical Corporation

Dated: June 24, 1992

John D. Rice
Senior Counsel
Quantum Chemical Corporation
11500 Northlake Drive
Cincinnati, Ohio 45249

Counsel for Quantum Chemical Chemical Corporation

Dated:

Alan J. Topol
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, D.C. 20044
(202) 662-5302

QUEMETCO, INC. enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR QUEMETCO, INC.

DATED: June 24, 1992

JOHN DE PAUL
Vice President,

1111 West Mockingbird Lane
Dallas, Texas 75257

DATED: June 25, 1992

BOOTH, MITCHEL & STRANGE

By _____
KEVIN K. CALLAHAN
Counsel for QUEMETCO, INC.
3435 Wilshire Boulevard
30th Floor
Los Angeles, California 90010
Telephone: (213) 738-0100

Rheem Manufacturing Company enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR RHEEM MANUFACTURING COMPANY

Dated: 6/3/92

Daniel H. Brown
Vice President
405 Lexington Ave., 22nd floor
New York, NY 10174

Dated: 6/6/92

David T. Peterson
Counsel for Rheem Manufacturing Company
Hill, Wynne, Troop & Meisinger
10940 Wilshire Blvd.
Los Angeles, CA 90024-3902
(310)824-7000

Rockwell International Corporation enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR ROCKWELL INTERNATIONAL CORPORATION

Dated: 6/15/92

John R. Stocker
Vice President & Associate General Counsel
2201 Seal Beach Boulevard
P. O. Box 4250
Seal Beach, CA 90740-8250

Dated: 6-16-92

Peter R. Taft
Counsel for Rockwell International Corporation
355 South Grand Avenue
Thirty-Fifth Floor
Los Angeles, CA 90071-1560

Rohr, Inc. enters into this Consent Decree in the matter of United States v. Stringfellow, et al, relating to the Stringfellow Hazardous Waste Superfund Site.

FOR ROHR, INC.

Dated: June 9, 1992

R. W. Madsen
Vice President, General Counsel
and Secretary

Dated: June 25 1992

Barry P. Goode, Esq.
Counsel for Rohr, Inc.
McCutchen, Doyle, Brown & Enersen
Three Embarcadero Center
San Franciso, CA 94111
(415) 393-2110

Rhône-Poulenc Basic Chemicals Co. (formerly known as and sued herein as "Stauffer Chemical Company) enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR RHONE-POULENC BASIC CHEMICALS CO.
(Formerly Stauffer Chemical Company)

Dated: 6/8/92

Michael S. Leo

Michael S. Leo
Vice President
CN 5266
Princeton, NJ 08543-5266

Dated: 6/18/92

Joseph D. Lonardo

Counsel For Rhône-Poulenc Basic Chemicals Co.

J.B. Stringfellow, Jr., Stringfellow Quarry Company, and Stringfellow Quarry Company, Inc. enter into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

Stringfellow
FOR Quarry COMPANY, INC. */

Dated: 6/15/92

[Name -- Please Type]
[Title -- Please Type]
[Address -- Please Type]

Dated: 6/15/92

[Counsel For]
[Address]
[Phone Number]

221 North Figueroa Street, Suite 1200
Los Angeles, California 90012
(213) 250-1800

Weyerhaeuser, Company enters into this Consent Decree in the matter of United States v. Stringfellow, et al., relating to the Stringfellow Hazardous Waste Superfund Site.

FOR WEYERHAEUSER COMPANY

Dated: June 16, 1992

James P. Odendahl
Director of Toxic/Solid Waste Team
Weyerhaeuser Company CH 1K29
Tacoma WA 98477

Dated: June 16, 1992

Gabriel E. Gedvila
Assistant General Counsel
Weyerhaeuser Company CH 2J28
Tacoma WA 98477

Appendix A

STATEMENT OF WORK

1.0 INTRODUCTION, DEFINITIONS, AND GENERAL PROVISIONS

1.1 Introduction

1.1.1 This Statement of Work ("SOW") details the activities to be undertaken by the Settling Defendants in compliance with this Consent Decree. The Work shall be consistent with the decisions set forth in the Stringfellow 1990 Record of Decision ("1990 ROD") attached at Appendix B to the Consent Decree and performed pursuant to the Consent Decree. The Zone 1 Dewatering System and the Community Extraction System Elements of Work represent the initial performance of the remedial actions selected in the 1990 ROD.

1.1.2 Geographic Descriptions of the Site.

Areas of the Site are designated as the four specific geographic zones, briefly described, below.

1.1.2.1 Zone 1: On-site/Upper Mid-Canyon Area -- Zone 1 includes the original 17-acre disposal area in the northern part of Pyrite Canyon, southward to approximately 600 feet below the subsurface barrier ("barrier dam"). There is no residential or commercial population in this zone. Zone 1 groundwater is designated as Stream A.

1.1.2.2 Zone 2: Mid-Canyon area -- Zone 2 encompasses the portion of Pyrite Canyon that extends from the southern edge of Zone 1 to and including the existing Mid-Canyon extraction wells. Zone 2 has no residential population and limited commercial use as a rock quarry. Zone 2 groundwater is designated as Stream B.

1.1.2.3 Zone 3: Lower Canyon Area -- Zone 3 extends southward from the Mid-Canyon extraction wells to and including the Lower Canyon extraction system north of U.S. Highway 60. One private residence and two active businesses are located within this zone. Zone 3 groundwater is designated as Stream C.

1.1.2.4 Zone 4: Glen Avon Community -- Zone 4 includes the area south of the Lower Canyon extraction system to the leading edge of the plume of Site-related contaminated

groundwater, approximately 12,000 feet from Zone 1. The affected area is populated with a number of private residences. At present, the Glen Avon Basin aquifer (within which the Stringfellow plume lies) does not serve as a primary source of drinking water for local residents. The Zone 4 groundwater is designated as Stream D.

1.1.3 The five Elements of Work and their respective Components are the following:

1.1.3.1 The Zone 1 Dewatering System

* Bedrock Hydraulic Control Component
* Lowered Water Table Component
* Upgradient Groundwater Interception Component

1.1.3.2 The Community Extraction System

* Hydraulic Control Component
* Interim Operation Component
* Treatment and Disposal Component

1.1.3.3 Routine Groundwater Monitoring

* Water Level Monitoring Component
* Chemical Quality Monitoring Component

1.1.3.4 Routine Site Maintenance

1.1.3.5 Community Relations Support

1.2 Definitions

The following definitions apply to the terms used in the Consent Decree and the SOW.

1.2.1 "Work" shall mean all activities necessary to perform the following Elements of Work: Zone 1 Dewatering System, Community Extraction System, Routine Groundwater Monitoring, Routine Site Maintenance, and Community Relations Support.

1.2.2 "Element of Work" shall mean a portion of the Work that is designated as a separate project in this Statement of Work, i.e., Zone 1 Dewatering System, Community Extraction System, Routine Groundwater Monitoring, Routine Site Maintenance, and Community Relations Support. Each Element of Work may have multiple components.

1.2.3 Operation and Maintenance of the Mid-Canyon

pretreatment plant (PTP) is defined as any and all activities undertaken or required to be undertaken pursuant to the existing contract between the Army Corps of Engineers and Camp, Dresser & McKee, FPC (Contract No. DAC09-90-C-0006) for the operation and maintenance of the PTP; any contract let pursuant to the Invitation for Bid for the Operation and Maintenance of the Stringfellow Pretreatment Plant in Riverside County, California (IFB No. DACW09-91-B-0011, including any amendments), any modifications to the foregoing, any superseding contracts, and/or any other activity necessary to ensure the continued effective operation of the PTP.

1.2.4 The "1990 Record of Decision" or "1990 ROD" shall mean the EPA Record of Decision relating to the Site executed on September 30, 1990, by the Regional Administrator, EPA Region IX, and all attachments thereto.

1.2.5 The "Administrative Order on Consent" or "AOC" shall mean the Administrative Order on Consent, No. 88-17, executed by the Director, Toxic and Waste Management Division, EPA Region IX on May 27, 1988, and all amendments and attachments thereto.

1.2.6 The "Fifth Amendment to the Administrative Order on Consent" or "Fifth Amendment to the AOC" shall mean the amendment to the Administrative Order on Consent executed by the Director, Hazardous Waste Management Division, EPA Region IX, on July 25, 1990, and all attachments thereto.

1.2.7 "Settling Defendants" shall mean all defendants in this action who are signatories to this Consent Decree.

1.2.8 "Performance Standard" shall mean those specific requirements to be achieved by the Settling Defendants in implementing the Elements of Work outlined in Section 1.1.3. The Performance Standards are specified in Sections 2.3.1.4, 2.3.4.4, and 2.4.1.4.

1.2.9 "Residuals" shall mean any solid waste, sludge, residue, contaminated media, or other by-product of the treatment, storage, or disposal of any water generated in the performance of the Work. This term also includes contaminated materials produced by any excavation, drilling, or soil dislocation resulting from performance of the Work.

1.3 General Provisions

1.3.1 The Work activities associated with this SOW are interim measures. Final cleanup goals for all hazardous substances, pollutants, or contaminants in each geographic zone of the Site that were not selected in the 1990 ROD will be determined in a future Record of Decision. These cleanup goals will then be incorporated into the final performance standards for all remedial activities at the Site, including the systems constructed or installed as part of the Work. The Settling Defendants are not required under this Consent Decree to achieve any final cleanup goals.

1.3.2 Except as set forth in Section 2.4.2.1, Settling Defendants must obtain written acceptance from EPA prior to the commencement of any particular treatment or disposal option. Settling Defendants may propose to EPA alternative treatment or disposal options for performing the Work under this SOW. Such proposal shall be in writing and include any supporting information.

1.3.3 Settling Defendants shall comply with federal, state, and/or local requirements for disposal of water and residuals, including obtaining necessary authorizations or permits.

1.3.4 With respect to the requirements of the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) and pretreatment requirements, 33 U.S.C. §§ 1311 and 1317, the standards currently set forth in the Santa Ana Watershed Project Authority (SAWPA) permit governing effluent discharges from the existing Mid-Canyon pretreatment plant, satisfy the requirements for any water treated at the pretreatment plant and discharged to the SARI. Disposal of any extracted water which EPA determines shall be treated at the pretreatment plant and discharged to the SARI will be in compliance with the existing permit standards and any future modifications.

1.3.5 Settling Defendants must receive written acceptance from EPA prior to any surface discharge.

1.3.6 The South Coast Air Quality Management District's (SCAQMD) Regulation XIII, federally enforceable under the Clean Air Act, sets forth standards applicable to emissions of VOCs from new sources requiring best available control technology when

emissions of VOCs exceed a certain threshold. Use of technologies which remove VOCs from extracted groundwater or from soils shall be in compliance with these SCAQMD standards.

1.3.7 The SCAQMD's Rule 1167, requires that all air stripping facilities that emit more than one pound per day of total VOC emissions install controls capable of reducing air emissions by 90 percent. In the event that treatment of any contaminated groundwater utilizes air stripping, air stripping facilities shall be in compliance with these SCAQMD standards.

1.3.8 With respect to the Underground Injection Control standards of the Federal Safe Drinking Water Act, reinjection into Class V wells, such as those at the Stringfellow Site, may not cause a violation of an existing drinking water standard (MCL) under the SDWA, in this case 5 micrograms per liter for TCE and 10 milligrams per liter for nitrates (as Nitrogen). Any reinjection of water shall be in compliance with these standards. In addition, such reinjected water shall meet a chloroform standard of 6 micrograms per liter, and comply with the substantive standards and requirements under the California Regional Water Quality Board, "Water Quality Control Plan, Santa Ana River Basin."

1.3.9 Settling Defendants shall meet the requirements contained in any authorization to discharge or dispose of water to the Jurupa Community Services District ("JCSD") Sewer, or in any other authorization or permit obtained for alternative discharge or disposal options accepted by EPA.

1.3.10 Under no circumstances shall any effluent discharge of water contain concentrations of TCE exceeding 5 micrograms per liter or chloroform exceeding 6 micrograms per liter.

1.3.11 Settling Defendants shall comply with all applicable or relevant and appropriate requirements of law in performing the Work, including obtaining necessary authorizations or permits.

1.3.12 Nothing in the SOW shall be deemed to relieve the Settling Defendants of their obligation under the AOC, related to the Lower Canyon and Community Wells Extraction Systems, and the Settling Defendants shall still be required to complete all work and

obligations under that AOC.

1.3.13 Unless otherwise specified in this Consent Decree, the Settling Defendants will begin performance of the Work under this Consent Decree no later than the date of lodging of this Consent Decree and shall continue as specified in this Consent Decree.

Settling Defendants will not, however, be required to commence construction of any permanent facilities until this Consent Decree has been entered by the Court or unless such construction is otherwise authorized by the Court. Any delay in the commencement of construction of permanent facilities caused by a delay in the entry of this Consent Decree shall extend, pro tanto, the construction deadlines contained herein.

1.3.14 Each Element of Work shall be integrated and coordinated with all other Elements of Work, and with all other operations and/or tasks, including, but not limited to, the operation and maintenance of the Mid-Canyon Pretreatment Plant and emergency response activities.

1.3.15 In the event that the performance of Work under this SOW results in the alteration, destruction or abandonment of any needed facility at the Site, Settling Defendants shall either repair or replace, as necessary, such facility with one that provides the same level of control or function. The need and schedule for repair or replacement shall be determined by EPA (after consultation with DTSC). Any repair or replacement is subject to the approval of EPA (after consultation with DTSC).

1.3.16 Settling Defendants shall be required to exercise all reasonable measures to secure all necessary authorizations and permits to properly dispose of any water extracted and/or any residual generated in performance of the Work.

1.3.17 Settling Defendants will not be required under the terms of this Consent Decree to treat, provide for treatment, or dispose of water transported to the Mid-Canyon Pretreatment Plant or to maintain the Mid-Canyon Pretreatment Plant.

1.3.18 Whenever Settling Defendants are obligated to perform an activity under this SOW, they may perform the activity themselves or engage a contractor (or contractors) accepted by EPA (after consultation

with DTSC), unless other arrangements are mutually agreed upon, in fulfillment of their obligation.

1.3.19 Whenever this SOW provides for review and comment by DTSC, it is the obligation of EPA to obtain such review and comment.

2.0 DESCRIPTION OF WORK TO BE PERFORMED, PERFORMANCE STANDARDS, OBJECTIVES, AND PERIOD OF OPERATION

2.1 This Section sets forth the Elements and Components of Work to be performed pursuant to this Consent Decree and states the Performance Standards, objectives, and period of operation for the Work.

2.2 Performance Standards

Settling Defendants shall demonstrate achievement of Performance Standards set forth in Sections 2.3.1.4, 2.3.4.4, and 2.4.1.4.

2.3 Zone 1 Dewatering System Element of Work

The Zone 1 Dewatering System Element of Work includes the Bedrock Hydraulic Control, Lowered Water Table, and Upgradient Groundwater Interception Components.

2.3.1 Bedrock Hydraulic Control Component

2.3.1.1 Settling Defendants shall design, construct, and operate a bedrock hydraulic cut-off system in Zone 1 in the vicinity of the on-site barrier dam using a horizontal extraction well system.

2.3.1.2. The objectives of this Component are to expeditiously and effectively reverse hydraulic gradients in bedrock at the cut-off location, and preclude contaminants from flowing through bedrock to areas downgradient from the cut-off location.

2.3.1.3 The location and number of wells will be proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).

2.3.1.4 The Performance Standard for this Component is to achieve hydraulic control. As used in this context, "hydraulic control" means a reversal of the hydraulic gradient in bedrock at the horizontal well(s) location.

2.3.1.5 The Settling Defendants shall demonstrate achievement of the Performance Standard for this Component of Work at representative locations proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC). The method of demonstration

shall be proposed by the Settling Defendants within one year of completion of construction of the Bedrock Hydraulic Control Component, and shall be based on data obtained during that period.

2.3.1.6 The "initiation of operation" for the Bedrock Hydraulic Control Component shall be deemed to have occurred on the date of EPA's written acceptance (after seeking review and comment by DTSC) of the Settling Defendants' Achievement of Performance Standard Report.

2.3.2 Lowered Water Table Component

2.3.2.1 Settling Defendants shall design, construct and operate a dewatering system in Zone 1 upgradient of the existing barrier dam using vertical extraction wells. The initial system shall consist of from two (2) to four (4) new vertical extraction wells, and the installation of pumps in two existing wells near the barrier dam, at locations approved by EPA (after seeking review and comment by DTSC). The installation will include storage tanks for water pumped from these wells, if required by EPA. Based upon the data from the initial wells, additional wells may be necessary.

2.3.2.2 The objective of this Component is to construct a system that (1) expeditiously and effectively lowers the water table to approximately the top of the bedrock in order to ensure that the hydrologic zone of influence of the dewatering system encompasses all the Zone 1 contaminated groundwater upgradient of the barrier dam, and (2) maintains this dewatered state.

The Parties acknowledge that the preceding paragraph is not a Performance Standard and that the Settling Defendants may not achieve dewatering to bedrock within the time they are required to perform under this Consent Decree.

2.3.2.3 The location and number of wells will be proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).

2.3.2.4 The "initiation of operation" for the Lowered

Water Table Component shall be deemed to have occurred on the date of EPA's written acceptance (after seeking review and comment by DTSC) of the Settling Defendants' Construction Completion Report.

2.3.2.5 The rate of dewatering and the effectiveness of the Lowered Water Table Component shall be measured at representative locations proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).

2.3.3 Settling Defendants shall convey by pipeline, or alternative method approved by EPA (after consultation with DTSC), any water generated by the design, construction, or operation of the dewatering system Components described in 2.3.1 and 2.3.2 to the existing Mid-Canyon Pretreatment Plant for treatment and disposal.

2.3.4 Upgradient Groundwater Interception Component

2.3.4.1 Settling Defendants shall design, construct, and operate an extraction well system in Zone 1 upgradient of the barrier dam and the former disposal ponds.

2.3.4.2 The objectives of this component are to intercept uncontaminated water and to divert it into the existing surface water drainage system in order to minimize the amount of clean water being processed at the Mid-Canyon Pretreatment Plant.

2.3.4.3 The location and number of wells will be proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).

2.3.4.4 The Performance Standard for this Component is to demonstrate that the Upgradient Groundwater Interception Component effectively captures uncontaminated water and does not result in drawing groundwater from the former disposal ponds area into any upgradient wells.

The Parties recognize that it may not be practicable to capture all of the uncontaminated water upgradient of the former disposal ponds.

2.3.4.5 The Settling Defendants shall demonstrate achievement of the Performance Standard for this Component of Work at representative locations proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).

2.3.4.6 The "initiation of operation" for the Upgradient Groundwater Interception Component shall be deemed to have occurred on the date of EPA's written acceptance (after seeking review and comment by DTSC) of the Settling Defendants' Achievement of Performance Standard Report.

2.3.4.7 Settling Defendants shall convey any water generated by the operation of the Upgradient Groundwater Interception Component to the existing surface water drainage channels.

2.3.5. Period of Operation for Zone 1 Dewatering System Element of Work

The period of operation for the Zone 1 Dewatering System Element of Work begins on the date of EPA's written acceptance (after seeking review and comment by DTSC) of the Settling Defendants' Initiation of Operation of All Components Report and ends on the later of (a) two years from the date of EPA's written acceptance of this Report, or (b) one year from either the date of a Final State Order as defined in the Stipulation, Recommendation of Special Master and Order entered on September 6, 1991 ("Stipulation"), or the date there is a settlement between the State and the Defendants resolving the State's share, as defined in the Stipulation.

2.3.6. In the event that during operation of the Bedrock Hydraulic Control Component or the Upgradient Groundwater Interception Component by Settling Defendants, data demonstrate that the Performance Standard is no longer being met, the period of operation in Section 2.3.5 for operating the Zone 1 Dewatering System Element of Work shall be extended, pro tanto, until Settling Defendants demonstrate, and EPA accepts in writing, resumed compliance with such Performance Standard. EPA shall respond (after seeking review and comment by DTSC) within ninety (90) days of receiving the Settling Defendants' report demonstrating resumed compliance. After EPA accepts Settling Defendants'

demonstration of resumed compliance, Settling Defendants shall be required to continue operation of this Element of Work for the amount of time that was remaining under Section 2.3.5 when the Component ceased to meet the Performance Standard. If, however, the two year period in clause (a) of Section 2.3.5 above had been completed prior to the time that the Performance Standard was no longer being met, then the period of operation shall end on the later of the date when EPA accepts in writing, resumed compliance with the Performance Standard, or when the one year period in clause (b) of Section 2.3.5 above is concluded. Failure of continued compliance with the Performance Standard shall not relieve Settling Defendants of the obligation to continue operating any of the Components of the Zone 1 Dewatering System Element of Work.

2.3.7. Settling Defendants shall dispose of any residuals generated during design, construction, and/or operation of the Components of Work described in 2.3.1, 2.3.2 and 2.3.4 in compliance with federal, state, and/or local requirements.

2.3.8 Settling Defendants shall be responsible for all data collection and technical evaluation of the Components described in 2.3.1, 2.3.2 and 2.3.4 during the period of operation described in 2.3.5. Settling Defendants shall submit evaluation reports to EPA at 6-month intervals beginning at the initiation of operation of any of the Components. These reports shall conform to Section 3.11.

2.4 Community Extraction System Element of Work

The Community Extraction System Element of Work includes the Hydraulic Control, Treatment and Disposal, and Interim Operation Components.

2.4.1 Hydraulic Control Component

2.4.1.1. The Settling Defendants shall design, construct, and operate an extraction well system in Zone 4, the community area.

2.4.1.2. The objectives of this Component are to provide expeditious and effective hydraulic control of the plume of Site-related groundwater contamination, and to clean up the plume, over time, to the final cleanup goals set forth in the 1990 ROD or which are later

determined by EPA (after seeking review and comment by DTSC). However, none of these cleanup goals is a Performance Standard under this Consent Decree, and Settling Defendants are not required under the terms of the Consent Decree to achieve cleanup of the plume to the cleanup goals in the 1990 ROD or to those which are later determined by EPA.

2.4.1.3 The location and number of wells will be proposed by the Settling Defendants within one year of commencement of operation of the Interim Operation Component described in 2.4.6. The Settling Defendants' proposal shall be based on available data, and shall be approved by EPA (after seeking review and comment by DTSC).

2.4.1.4 The Performance Standard for this Component is to demonstrate hydraulic control of the plume of Site-related groundwater contamination. Settling Defendants shall minimize, to the maximum extent practicable, the amount of uncontaminated groundwater extracted.

2.4.1.5 Settling Defendants shall demonstrate achievement of the Performance Standard for this Component of Work at representative locations proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).

2.4.1.6 For purposes of Section 2.4.3, the "initiation of operation" for the Hydraulic Control Component shall be deemed to have occurred on the date of EPA's written acceptance (after seeking review and comment by the DTSC) of the Settling Defendants' Achievement of Performance Standard Report.

2.4.2 Treatment and Disposal Component

2.4.2.1 Settling Defendants shall design and construct (as appropriate) and operate a system to collect, treat, and dispose of groundwater extracted by the Hydraulic Control Component. Settling Defendants may dispose of the extracted groundwater to the Jurupa Community Services District (JCSD) sewer system or to an extension to the Santa Ana Regional Interceptor (SARI) line (if available), provided that Settling Defendants are able to

obtain the necessary authorizations or permits, or Settling Defendants may utilize an alternative disposal option proposed by the Settling Defendants and accepted by EPA (after seeking review and comment by DTSC), for which the Settling Defendants are able to obtain necessary authorizations or permits. Such system shall include the collection, treatment, and disposal of residuals generated during the treatment process.

The Parties acknowledge that the disposal option utilized pursuant to the preceding paragraph may not be the final disposal option for such water. The final disposal option for such water will be selected through an amendment to the 1990 ROD or through a subsequent ROD.

2.4.2.2 Settling Defendants may propose to modify the system described in 2.4.2.1. Any proposed modifications shall be subject to approval by EPA (after seeking review and comment by the DTSC).

2.4.2.3 Settling Defendants must comply with all applicable or relevant and appropriate requirements of law as to the treatment, storage, and disposal of any water or residuals.

2.4.2.4 Settling Defendants shall meet any requirements contained in any authorization to discharge or dispose of water to the Jurupa Community Services District ("JCSD") Sewer, or in any other authorization or permit obtained for alternative discharge locations accepted by EPA.

2.4.2.5 Under no circumstances shall any effluent discharge of water from Zone 3 and Zone 4 contain concentrations of TCE exceeding 5 micrograms per liter or chloroform exceeding 6 micrograms per liter.

2.4.3. Period of Operation for Hydraulic Control and Treatment and Disposal Components

2.4.3.1 The period of operation for the Hydraulic Control and Treatment and Disposal Components is the later of (a) two years from initiation of operation of the Hydraulic

Control Component as defined in Section 2.4.1.6, or (b) one year from either the date of a Final State Order as defined in the Stipulation, Recommendation of Special Master and Order entered on September 6, 1991 ("Stipulation"), or the date there is a settlement between the State and the Defendants resolving the State's share, as defined in the Stipulation.

2.4.3.2 In the event that during the operation of the Hydraulic Control and Treatment and Disposal Components by Settling Defendants, data demonstrate that the Performance Standard is no longer being met, the period of operation in Section 2.4.3.1 shall be extended, pro tanto, until Settling Defendants demonstrate, and EPA accepts in writing, resumed compliance with the Performance Standard. EPA shall respond (after seeking review and comment by DTSC) within ninety (90) days of receiving the Settling Defendants' report demonstrating resumed compliance. After EPA accepts Settling Defendants' demonstration of resumed compliance, Settling Defendants shall be required to continue operation of this Element of Work for the amount of time that was remaining under Section 2.4.3.1 when the Component ceased to meet the Performance Standard. If, however, the two year period in clause (a) of Section 2.4.3.1 above had been completed prior to the time that the Performance Standard was no longer being met, then the period of operation shall end on the later of the date when EPA accepts in writing, resumed compliance with the Performance Standard, or when the one year period in clause (b) of Section 2.4.3.1 above is concluded. Failure of continued compliance with the Performance Standard shall not relieve Settling Defendants of the obligation to continue operating any of the Components of the Community Extraction System Element of Work.

2.4.3.3 Notwithstanding the provisions of Sections 2.4.3.1 and 2.4.3.2, if on December 31, 1999, or any date thereafter, the Settling Defendants would have completed the period of operation under Section 2.4.3.1, but for the lack of a Final State Order or settlement between the State and the Defendants resolving

the State share, and each of the following conditions has been satisfied, then the Settling Defendants' obligation to treat and dispose of the water extracted under the Treatment and Disposal Component of the Community Extraction System Element of Work shall terminate:

(1) The Settling Defendants have completed, to the satisfaction of EPA (after consultation with DTSC), any Additional Response Actions as defined in the Consent Decree relating to the Community Extraction System Element of Work.

(2) Settling Defendants are employing dissolved solids removal technology to meet the requirements for disposal of the extracted water.

2.4.4 Settling Defendants shall dispose of any residuals generated during design, construction, start-up, and/or operation of Components 2.4.1 and 2.4.2. in compliance with federal, state, and/or local requirements.

2.4.5 Settling Defendants shall be responsible for all data collection and technical evaluation of the Hydraulic Control and Treatment and Disposal Components of Work during the period of operation described in section 2.4.3. Settling Defendants shall submit evaluation reports to EPA at 6-month intervals beginning at the initiation of operation of the Hydraulic Control Component as described in Section 2.4.1.6. These reports shall conform to Section 3.11.

2.4.6 Interim Operation Component

2.4.6.1 Paragraph XIII (Termination and Satisfaction) of the Fifth Amendment to the AOC states "Respondents shall not be required by this Amended Order to operate any well installed pursuant to this Amended Order beyond the period required for the gathering of test data as defined by the Final Work Plan (Document 89-01R4)."

2.4.6.2 The objective of this Component is to provide interim control of the Zone 4 plume of Site-related groundwater contamination for the period between the completion of the long term

pump tests conducted pursuant to the Fifth Amendment to the AOC and the initiation of operation of the Hydraulic Control Component.

2.4.6.3 Following completion of the long term pump tests under the Fifth Amendment to the AOC, Settling Defendants shall make necessary piping changes, extract groundwater from both the Northern and Southern test wells, and treat and dispose of the extracted groundwater. Settling Defendants shall dispose of the extracted groundwater to the Jurupa Community Services District (JCSD) sewer system, or utilize an alternative disposal option proposed by the Settling Defendants and accepted by EPA, for which the Settling Defendants are able to obtain necessary authorizations or permits.

2.4.6.4 For purposes of the Consent Decree, facilities required for the Interim Operation Component shall not be deemed "permanent facilities" within the meaning of Section 1.3.13.

2.4.6.5 Settling Defendants shall propose the rate of groundwater flow extraction from the Northern and Southern wells using results from the short term pump tests conducted pursuant to the Fifth Amendment to the AOC as well as results available from the long term pump tests. The proposed rates of extraction and methods of treatment and disposal, including supporting analysis, shall be submitted in writing to EPA for approval (after seeking review and comment by the DTSC). Any subsequent proposed changes to the rate of extraction, or to the method of treatment or disposal shall also be subject to approval by EPA (after seeking review and comment by the DTSC).

2.4.6.6 Settling Defendants shall not discharge to the JCSD sewer, or any alternative disposal option, effluent that contains TCE and Chloroform exceeding 5 and 6 micrograms/liter, respectively. The effluent shall meet all requirements of the JCSD, or other authorizations, permits, or requirements of law for any alternative disposal option.

2.4.6.7 Settling Defendants shall submit evaluation reports to EPA at 6-month intervals beginning

at the commencement of operation of the Interim Operation Component. These reports shall conform to Section 3.11.

2.5 Routine Groundwater Monitoring Element of Work

The Routine Groundwater Monitoring Element of Work includes the Water Level Monitoring and Chemical Quality Monitoring Components of Work.

2.5.1 Water Level Monitoring Component

2.5.1.1 Settling Defendants shall conduct water level monitoring and submit reports to EPA that describe groundwater flow system conditions observed in Zones 1 through 4.

2.5.1.2 The objectives of this Component are to monitor (1) groundwater flow system conditions throughout Zones 1 through 4, (2) changes in groundwater storage, (3) hydraulic effectiveness of remedial systems, and (4) vertical distribution of hydraulic head.

2.5.2 Chemical Quality Monitoring Component

2.5.2.1 Settling Defendants shall conduct chemical quality monitoring and submit reports to EPA which describe groundwater chemical conditions in Zones 1 through 4.

2.5.2.2 The objectives of this Component are to monitor (1) the plume center from Zone 1 through Zone 4, (2) representative cross sections of the plume in the community area, (3) vertical distribution of the plume, (4) quality of water extracted from the plume, and (5) plume cleanup progress.

2.5.3 Settling Defendants shall dispose of any water and residuals generated during the monitoring activities described under 2.5.1 and 2.5.2 in compliance with federal, state, and/or local requirements.

2.5.4 Settling Defendants shall perform the Work described under 2.5.1 and 2.5.2 for a period of four years from the date of contract award under Section 5.2.4.

2.5.5 The Settling Defendants shall be responsible for all data collection and technical evaluation during

the period specified under Section 2.5.4. Methods used shall be approved by EPA (after seeking review and comment by DTSC). Reports submitted to EPA shall satisfy the objectives specified in Sections 2.5.1.2 and 2.5.2.2, and shall include the routine computer transfer of data.

2.6 Routine Site Maintenance Element of Work

2.6.1 Routine Site Maintenance

2.6.1.1 The Settling Defendants shall provide on a scheduled basis, routine site maintenance at the Site.

The Settling Defendants shall also provide on an unscheduled basis, routine site maintenance within 24 hours or sooner of verbal notice from EPA of the need for such maintenance.

2.6.1.2 The objective of routine site maintenance is to ensure that existing facilities and control measures at the Site continue to be effective.

2.6.1.3 Prior to commencing Work under this Element of Work, Settling Defendants shall complete an inventory of existing Site conditions, including an assessment of existing Site facilities and controls. Based upon such inventory, Settling Defendants shall propose a routine site maintenance program and schedule (i.e., Work Plan) for EPA approval (after seeking review and comment by DTSC).

2.6.1.4 Routine site maintenance activities include, but are not limited to, the following:

* Perform routine rainfall and runoff analyses (based on existing measurement devices), including submission of reports and computer transfer of data.
* Maintain, repair, and conduct routine inspections of the Zone 1 cover, including mowing and weed control.
* Maintain, repair, and conduct routine inspections of the 4-acre cap, including mowing and weed control. The Parties recognize that some excessive erosion conditions currently exist on the 4-acre cap. DTSC will conduct the following activities to repair these existing excessive erosion conditions: 1) replace,

compact, and vegetate soil in eroded areas to December 1991 as-built conditions, and 2) install an erosion-control measure (e.g., cross-berm or cross-drain) in the northwest sector along or near line 5+50 between the concrete gutter and the west scarp.

Settling Defendants' obligation to commence routine site maintenance activities for the 4-acre cap shall begin on the later of the date: 1) EPA notifies the Settling Defendants in writing that DTSC has completed the erosion repair, or 2) 24 weeks after lodging of the Consent Decree.

This provision does not affect in any way Settling Defendants' other routine site maintenance responsibilities under this Section, and except as set forth in the preceding paragraph, the Settling Defendants shall perform all activities described in Section 5.2.5 in accordance with the schedules in Section 5.2.5.

* Clean and maintain extraction wells and appurtenances, excluding pumps, motors and pump column piping.
* Maintain and repair lighting and electrical power to the decontamination pad and other facilities, excluding extraction well pump controls.
* Repair and replace pipelines, valves, valve vaults, and electrical cables for the onsite, mid-canyon, and lower canyon extraction systems, excluding the extraction well boxes, storage tank compounds, and Mid-Canyon pretreatment plant.
* Maintain and clean the decontamination pad and decontamination water collection system.
* Transfer decontamination water generated from site maintenance activities to the Mid-Canyon pretreatment plant.
* Control vegetation and maintain soil surface, including weed control, revegetation, and erosion repair, in Zones 1-3, except as noted above.
* Remove trash.
* Dispose/remove hazardous wastes/materials generated during site maintenance

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activities.

* Maintain the Zone 1 storage facility, including plumbing, electrical and structural repair, pest control, and water supply and holding tank pumping.
* Provide security for Work performed by the Settling Defendants under the Consent Decree.
* Sample and analyze soil, groundwater, and surface water, as appropriate.
* Repair roads and bridges in Zones 1-3.
* Repair fence and gates in Zones 1-3.
* Recondition and maintain, as necessary, groundwater monitoring wells and appurtenances required for the Routine Groundwater Monitoring Element of Work under Section 2.5. Should it become necessary to abandon any of the wells required for the Routine Groundwater Monitoring Element of Work during the period of performance in Section 2.6.2, Settling Defendants shall install a new monitoring well to replace each abandoned well at a location proposed by the Settling Defendants and approved by EPA (after seeking review and comment by DTSC).
* Plug and abandon from three to five existing monitoring wells that are not required for the Routine Groundwater Monitoring Element of Work under Section 2.5. The wells to be plugged and abandoned shall be proposed by the Settling Defendants in the Work Plan referenced in Section 2.6.1.3, above, and approved by EPA (after seeking review and comment by DTSC).
* Remove and trim trees, as appropriate.
* Conduct routine inspections of all monitoring wells.
* Survey monitoring wells required for periodic sampling.
* Repair Lower Canyon and other dedicated sampling pumps.
* Maintain, clean, and replace all drainage structures, including gunite and natural channels, trash racks, drop structures, swales, metering structures, and rip-rap, in Zones 1-3.

2.6.2 Settling Defendants shall perform the Work described in Section 2.6 for a period of four years

from the date of contract award under Section 5.2.5.

2.7 Community Relations Support Element of Work

2.7.1 The Settling Defendants shall provide for community relations support activities.

2.7.2 Community relations support activities shall include, but are not limited to, the following:

* Assist EPA, or at EPA's request, assist DTSC in the development and distribution of newsletters and fact sheets concerning the Work performed by the Settling Defendants under this Consent Decree and this SOW.

* Assist EPA, or at EPA's request, assist DTSC in the preparation of and participate in technical presentations concerning the Work performed by the Settling Defendants under this Consent Decree and this SOW.

* Assist EPA, or at EPA's request, assist DTSC in providing individual notice to residents in the nearby vicinity of where Work will be performed by the Settling Defendants under this Consent Decree and this SOW.

* Provide verbal status reports to the Stringfellow Advisory Committee ("SAC") concerning the work performed by the Settling Defendants under this Consent Decree and this SOW.

* Provide extra copies for the public and SAC of final deliverables and, at EPA request, other documents produced in compliance with this SOW.

2.7.3 In connection with the Community Relations Support activities, Settling Defendants shall, for each of five years after entry of the Consent Decree, pay $25,000 into an escrow account maintained at a federally chartered bank in California. These funds shall be used for such additional Community Relations Support activities as may be proposed by the SAC and approved by both the Settling Defendants and EPA (after consultation with DTSC). The first payment to the escrow shall be made not later than 60 days after entry of this Consent Decree, and successive payments shall be made on each anniversary thereof. Upon completion of the Work, any unobligated and unexpended funds and any

accrued interest shall revert to the Settling Defendants. Documentation of payments made to the escrow account shall be submitted to EPA on an annual basis, at the time such payments are made.

2.7.4 The Settling Defendants shall provide Community Relations Support in connection with Section 2.7.2 throughout the performance of any Work.

Section 3.0 DESCRIPTION OF PLANS AND REPORTS

3.1 This Section sets forth a description of the types of information that should be included in the plans and reports listed, below. This Section is intended to provide a framework for developing such plans and reports, and is not intended to be a prescriptive explanation of their content. Other information and requirements may be prescribed by EPA through the review of the deliverables and other documents prepared by the Settling Defendants under this Consent Decree. Unless otherwise specified, the description is not meant to distinguish between draft and final versions of the documents.

3.1.1. The following is a list of the plans and reports described in this Section (Note: This Section does not address all of the documents required under this SOW and Consent Decree).

- Work Plan
- Health and Safety Plan
- Quality Assurance Project Plan
- Sampling Plan
- Overall Project Quarterly Report
- Technical Memorandum
- Construction Completion Report
- Initiation of Operation of All Components Report
- Achievement of Performance Standard Report
- Evaluation Report
- Draft Design Report
- Final Design Report
- Construction As-built Report
- Completion of Work Report

3.2 Work Plan

The Work Plan shall be the primary plan to control and guide the Components or Elements of Work performed by the Settling Defendants under this Consent Decree. The Work Plan shall include, but is not limited to, the following information:

- An overall description of the work to be performed with cross-references to other documents containing more specific details.

- The technical approach for undertaking, monitoring, and completing the Component or Element of Work. The discussion should include a description of the procedures, specific activities and objectives of such activities, and facilities to be installed; Performance Standards; identification of and plans for obtaining any necessary off-site access, permits, or approvals;

identification of and plans for complying with ARARs; and identification of and plans for disposing of any residuals generated.

- A description of the deliverables and milestones.
- The schedule for the work to be performed.
- Staffing plan, including organizational structure, positions, and resumes.
- Plans for integrating, coordinating, and communicating with EPA, DTSC, and other government officials.
- Plans for community relations support and communication.

3.3 Health and Safety Plan

The Health and Safety Plan shall establish health, safety, and emergency response procedures associated with the Component or Element of Work to be performed by the Settling Defendants. The Plan shall conform to applicable or appropriate Occupational Health and Safety Administration (OSHA) regulations, requirements, and guidance. It shall include, but is not limited to, the following basic information:

- Overall description of the Plan, including purpose and a general description of the Component or Element of Work covered by the Plan.
- Emergency and post-emergency procedures, including the designation of the Settling Defendants' emergency response coordinator.
- Standard jobsite health and safety considerations and procedures, including hazards evaluation and chemicals of concern.
- Communication and notification procedures within the Settling Defendants' organization, and with EPA, State, other government officials, and community members.
- Personal Protective Equipment and instructions/procedures to ensure personnel protection and safety.
- Monitoring plans.
- Medical surveillance programs and training.
- Recordkeeping and reporting procedures.

3.4 Quality Assurance Project Plan

The Quality Assurance Project Plan shall establish quality assurance and quality control procedures associated with the Component or Element of Work to be performed by the Settling Defendants. It shall conform to EPA guidance, including "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans," December 1980, (QAMS-005/80); Data Quality Objective Guidance," (EPA/540/G87/003 and 004); "EPA NEIC Policies and Procedures Manual," May 1978, revised August 1991, (EPA 330/9-78-001-R). The Plan shall include, but is not limited to, the following basic information:

- Overall description of the Plan, including purpose and a general description of the Component or Element of Work covered by the Plan.
- Data quality objectives.
- Sampling and sample custody procedures.
- Analytical methods and procedures.
- Data reduction and validation.
- Control procedures, including internal quality control checks.
- Audits.
- Routine procedures to assess data quality.
- Corrective action procedures.
- Construction related QA/QC.

3.5 Sampling Plan

The Sampling Plan shall establish the sampling procedures associated with the Component or Element of Work to be performed by the Settling Defendants. The Sampling Plan shall conform to EPA guidance. It shall include, but is not limited to, the following basic information:

- Overall description of the Plan, including purpose and a general description of the Component or Element of Work covered by the Plan.
- Sampling rationale and objectives.
- Sampling locations and frequency.

- Routine monitoring.
- Sample designation.
- Sampling equipment and sampling, preservation, preparation and cleaning procedures.
- Chain of custody procedures (these must conform to EPA-NEIC procedures).

3.6 Overall Project Quarterly Report

The Overall Project Quarterly Report shall be a consolidated status report on all Work. The Report shall be divided into separate sections providing the status of the individual Elements and Components of Work under this SOW. It shall include, but is not limited to, the following basic information:

- Introduction, including the purpose, general description of the Work, and master schedule.
- Activities/tasks undertaken during the reporting period, and expected to be undertaken during the next reporting period.
- Deliverables/milestones completed during the reporting period, and expected to be completed during the next reporting period.
- Identification of issues and actions that have been or are being taken to resolve the issues.
- Schedules and schedule changes.

3.7 Technical Memorandum

The Technical Memorandum is the mechanism for requesting modification of plans, designs, and schedules. Technical memoranda are not required for non-material field changes that have been approved by EPA. In the event that Settling Defendants determine that modification of an approved plan, design, or schedule is necessary, Settling Defendants shall submit a written request for the modification to the EPA Project Coordinator which includes, but is not limited to, the following information:

- General description of and purpose for the modification.
- Justification, including any calculations, for the modification.

- Actions to be taken to implement the modification, including any actions related to subsidiary documents, milestone events, or activities affected by the modification.

- Recommendations.

3.8 Construction Completion Report

The Construction Completion Report certifies the completion of construction. The Report shall include, but is not limited to, the following:

- Overall description of the Report, including purpose and a general description of the Component or Element of Work covered by the Report.

- Certification of construction completion, including completed punch list from walk-through, and certification by a Professional Engineer registered in California that construction activities have been completed according to final design.

3.9 Initiation of Operation of All Components Report

The Initiation of Operation of All Components Report serves as the Settling Defendants' documentation supporting the request to commence the period of operation under Section 2.3.5. The Report shall include, but is not limited to, the following information:

- Overall description of the Report, including purpose and a description of the Element of Work (and its Components of Work) covered by the Report.

- Documentation supporting that "initiation of operation" provisions under Sections 2.3.1.6, 2.3.2.4, 2.3.4.6 have been satisfied.

3.10 Achievement of Performance Standard Report

The Achievement of Performance Standard Report serves as the Settling Defendants' documentation supporting achievement of the Performance Standard. The Report shall include, but is not limited to, the following information:

- Overall description of the Report, including purpose and a general description of the Component or Element of Work covered by the Report.

- Documentation supporting that the Performance Standard (under Sections 2.3.1.4, 2.3.4.4, 2.4.1.4, as

appropriate) has been met.

3.11 Six-Month Evaluation Report

The 6-month Evaluation Report details the effectiveness of the Component or Element of Work. It shall include, but is not limited to, the following:

- General description of the Component or Element of Work, including objectives and Performance Standards.
- Evaluation of the effectiveness of the Component or Element of Work in meeting the objectives and Performance Standards, including data and analytical and statistical methods used to support the evaluation.
- Corrective actions.
- Recommendations for achieving and/or enhancing the objectives of the Component or Element of Work.

3.12 Draft Design Report

The Draft Design Report represents a design equivalent to a 90% design. It shall include, but is not limited to, the following:

- Design drawings.
- Design specifications.
- Design calculations.
- General design concept and criteria of facilities to be constructed; description of existing facilities and identification of any that will be altered, destroyed, or abandoned during construction; description of off-site facilities required or affected; analysis/discussion of Performance Standards, and how they have been incorporated into the design; design parameters dictated by the Performance Standards or ARARs.

3.13 Final Design Report

The Final Design Report represents the 100% design, and shall include the basic information described for the Draft Design Report in addition to incorporating EPA's comments and modifications.

3.14 Construction As-built Report

The Construction As-Built Report shall include, but is not

limited to, the following:

- Overall description of the constructed Component or Element of Work and all associated facilities, appurtenances, and piping.
- As-built plans and specifications.
- QA/QC records.
- Summary of any modifications implemented by Technical Memoranda.

3.15 Completion of Work Report

The Completion of Work Report is the last report associated with the Element of Work performed by the Settling Defendants and is submitted by the Settling Defendants when the period of operation for the relevant Element of Work has been completed. The Report shall include, but is not limited to, the following:

- General description of the Element of Work that was undertaken, including objectives, period of operation, and Performance Standards.
- Demonstration that all obligations under a specific Element of Work under this SOW and Consent Decree have been satisfactorily completed or achieved by the Settling Defendants in accordance with the Consent Decree.

3.16 Operations Plan

The Operations Plan need not be a separate document, but should be incorporated in the appropriate plan or report described in Section 3.0. Discussion of the operations for a Component or Element of Work shall include, but is not limited to the following.

- Description of the operation of, and maintenance and monitoring required for the Component or Element of Work, including, but not limited to, the following:
  - * Operational procedures.
  - * Operational emergency response.
  - * Maintenance procedures and schedules.
  - * Monitoring procedures and schedules.
  - * Parts and equipment inventory.

* Compliance plan that describes the procedures to be used to guide the compliance testing activities and acceptance procedures for demonstrating compliance with the objectives and Performance Standards associated with the particular Component or Element of Work.

SECTION 4.0 DELIVERABLES

4.1 This Section lists the deliverables associated with the Work. The Consent Decree and SOW may require the submission of additional documents not listed herein.

4.1.1 Revised Schedule Showing Actual Dates

4.1.2 Overall Project Quarterly Reports

4.1.3 Zone 1 Dewatering-System Element of Work

* Final Work Plan
* Final Health and Safety Plan
* Final Quality Assurance Project Plan
* Final Sampling Plan
* Final Design Report for all Zone 1 Dewatering System Components
* Construction Completion Report for all Zone 1 Dewatering System Components
* Initiation of Operations of All Components Report
* Final Report Recommending Method of Measurement to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component
* Final Design Report of Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component
* Notice of Award of Contract(s)
* Achievement of Performance Standard Reports for Bedrock Hydraulic Control Component and for Upgradient Groundwater Interception Component
* Six-month Evaluation Reports
* Construction As-built Report for all Zone 1 Dewatering System Components
* Completion of Work Report

4.1.4 Community Extraction System Element of Work

4.1.4.1 Interim Control Component

* Final Work Plan
* Final Health and Safety Plan
* Final Quality Assurance Project Plan
* Final Sampling Plan
* Six-Month Evaluation Reports

4.1.4.2 Hydraulic Control and Treatment and Disposal Components

* Final Recommended Plan for Hydraulic Control and Treatment and Disposal Components
* Final Work Plan
* Final Health and Safety Plan
* Final Quality Assurance Project Plan
* Final Sampling Plan
* Final Design Report for Hydraulic Control and Treatment and Disposal Components
* Notice of Award of Contract(s)
* Construction Completion Report
* Construction As-built Report
* Achievement of Performance Standards Report for Hydraulic Control Component
* Six-Month Evaluation Reports
* Completion of Work Report for Community Extraction System Element of Work

4.1.5 Routine Groundwater Monitoring Element of Work

4.1.5.1 Water Level Monitoring Component

* Final Work Plan
* Final Health and Safety Plan
* Final Quality Assurance Project Plan
* Final Sampling Plan
* Notice of Award of Contract(s)
* Monitoring Reports

4.1.5.2 Chemical Quality Monitoring Component

* Final Work Plan
* Final Health and Safety Plan
* Final Quality Assurance Project Plan
* Final Sampling Plan
* Notice of Award of Contract(s)
* Monitoring Reports

4.1.6 Site Maintenance Element of Work

* Final Work Plan
* Final Health and Safety Plan
* Final Sampling Plan
* Final Quality Assurance Project Plan
* Notice of Award of Contract(s)

4.1.7 Community Relations Support Element of Work

* Final Work Plan
* Final Work Products

5.0 SCHEDULES

5.1 This Section provides schedules for deliverables discussed in Section 4.0 as well as other documents and significant milestone events. The schedules set forth below may be modified in accordance with Section XXI (Modification) of the Consent Decree. Requests for modifications made by the Settling Defendants shall include a discussion of the reason for the request, and any impact the proposed change in schedule may have on the schedule of subsequent deliverables and other documents, and on milestone events (also see Section 3.7). Settling Defendants may choose to submit deliverables prior to the date they are due.

5.2 Schedules

5.2.1 General

Activity	Weeks After Lodging
Revised Schedule Showing Actual Dates	10 Days

5.2.2 Zone 1 Dewatering System Element of Work, including the Bedrock Hydraulic Control, Lowered Water Table, and Upgradient Groundwater Interception Components of Work.

Activity	Weeks after Lodging
Submit Draft Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for all Zone 1 Dewatering System Components	12
Complete EPA Review of Draft Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for all Zone 1 Dewatering System Components	18
Submit Final Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for all Zone 1 Dewatering System Components	26
Commence Evaluation of Existing Wells	26
Commence Design for all Zone 1 Dewatering System Components	26
Complete Evaluation of Existing Wells	32

Activity	Weeks After Lodging
Submit Draft Design Report for all Zone 1 Dewatering System Components	42
Complete EPA Review of Draft Design Report for all Zone 1 Dewatering System Components	48
Submit Final Design Report for all Zone 1 Dewatering System Components	60
Prepare Bid Documents, Obtain Bids, Award Contract for all Zone 1 Dewatering System Components	74
Begin Installation of Facilities for all Zone 1 Dewatering System Components	74
Complete Installation and Commence Operation of all Zone 1 Dewatering System Components	96
Submit Construction Completion Report for all Zone 1 Dewatering System Components	100
Complete EPA Review of Construction Completion Report for all Zone 1 Dewatering System Components	(Within 90 days of submittal)
Submit Construction As-Built Report for all Zone 1 Dewatering System Components	100
Submit Evaluation Reports for Each Successive 6 Months of Operation	
Submit Draft Report Recommending Method of Measurment to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	148
Complete EPA Review of Draft Report Recommending Method of Measurment to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	152
Submit Final Report Recommending Method of Measurement to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	156
Submit Draft Design Report of Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	172

Activity	Weeks After Lodging
Complete EPA Review of Draft Design Report of Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	180
Submit Final Design Report of Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	190
Prepare Bid Documents, Obtain Bids, Award Contract, Commence Construction of Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	200
Complete Construction of Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	228
Submit Construction As-Built Report for Facilities to Determine Achievement of Performance Standard for Bedrock Hydraulic Control Component	236
Submit Achievement of Performance Standards Reports for Bedrock Hydraulic Control and Upgradient Groundwater Interception Components of Work	(When Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Reviews of Achievement of Performance Standards Reports for Bedrock Hydraulic Control and Upgradient Groundwater Interception Components of Work	(Within 90 days of submittal)
Submit Initiation of Operation of All Components Report	(When Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Review of Initiation of Operation of All Components Report	(Within 90 days of submittal)
Submit Completion of Work Report for Zone 1 Dewatering System Element of Work	(When Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Review of Completion of Work Report for Zone 1 Dewatering System Element of Work	(Within 90 days of submittal)

5.2.3 Community Extraction System Element of Work, including the Hydraulic Control, Treatment and Disposal, and Interim Control Components of Work

Activity	Weeks after Completion of Long Term Pump Tests
Complete Long Term Pump Tests Under Fifth Amendment to the AOC	0
Submit Draft Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for Interim Control Component	4
Complete EPA Review of Draft Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for Interim Control Component	8
Submit Final Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for Interim Control Component	12
Commence Operation of Interim Control Component	12
Submit Final Report from Fifth Amendment to the AOC	32

Activity	Weeks After Lodging
Submit Draft Recommended Plan for Hydraulic Control and Treatment and Disposal Components	79
Complete EPA Review of Draft Recommended Plan for Hydraulic Control and Treatment and Disposal Components	85
Submit Final Recommended Plan for Hydraulic Control and Treatment and Disposal Components	93
Submit Draft Work Plan, Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan for Hydraulic Control and Treatment and Disposal Components	105

Activity	Weeks After Lodging
Complete EPA Review of Draft Work Plan, Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan for Hydraulic Control and Treatment and Disposal Components	111
Submit Final Work Plan, Sampling Plan, Quality Assurance Project Plan and Health and Safety Plan for Hydraulic Control and Treatment and Disposal Components	117
Submit Draft Design Report for Hydraulic Control and Treatment and Disposal Components	117
Complete EPA Review of Draft Design Report for Hydraulic Control and Treatment and Disposal Components	123
Submit Final Design Report for Hydraulic Control and Treatment and Disposal Components	137
Prepare Bid Documents, Obtain Bids and Award Contract for Hydraulic Control and Treatment and Disposal Components	145
Complete Installation and Commence Operations of Hydraulic Control and Treatment and Disposal Components	212
Submit Construction Completion Report for Hydraulic Control and Treatment and Disposal Components	216
Submit Construction As-Built Report for Hydraulic Control and Treatment and Disposal Components	217
Submit Achievement of Performance Standard Report for Hydraulic Control Component	(when Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Review of Achievement of Performance Standard Report for Hydraulic Control Component	(Within 90 days of submittal)
Submit Evaluation Reports of Each Successive 6 Months of Operation	

Activity	Weeks After Lodging
Submit Completion of Work Report for Community Extraction System Element of Work	(when Settling Defendants determine necessary conditions have been satisfied)
Completion of EPA Review of Completion of Work Report for Community Extraction System Element of Work	(Within 90 days of submittal)

5.2.4 Routine Groundwater Monitoring Element of Work

Activity	Weeks After Lodging
Submit Draft Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for Routine Groundwater Monitoring Element of Work	8
Complete EPA Review of Draft Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for Routine Groundwater Monitoring Element of Work	12
Submit Final Work Plan, Sampling Plan, Quality Assurance Project Plan, and Health and Safety Plan for Routine Groundwater Monitoring Element of Work	14
Prepare Bid Documents, Obtain Bids and Award Contract for Routine Groundwater Monitoring Element of Work	18
Commence Routine Groundwater Monitoring	18
Submit Monitoring Reports	(as specified in the Work Plan accepted by EPA)
Submit Completion of Work Report for Routine Groundwater Monitoring Element of Work	(when Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Review of Completion of Work Report for Routine Groundwater Monitoring Element of Work	(Within 90 days of Submittal)

5.2.5 Routine Site Maintenance Element of Work

Activity	Weeks After Lodging
Complete Inventory of Site Conditions and Submit Report	6
Submit Draft Work Plan, Sampling and Analysis Plan, Quality Assurance Project Plan, and Health and Safety Plan for Routine Site Maintenance Element of Work	14
Complete EPA Review of Draft Work Plan, Sampling and Analysis Plan, Quality Assurance Project Plan, and Health and Safety Plan for Routine Site Maintenance Element of Work	18
Submit Final Work Plan, Quality Assurance Project Plan, Sampling Plan and Health and Safety Plan for Routine Site Maintenance Element of Work	20
Prepare Bid Documents, Obtain Bids and Award Contract for Routine Site Maintenance Element of Work	24
Commence Routine Site Maintenance Activities	24
Submit Completion of Work Report for Routine Site Maintenance Element of Work	(when Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Review of Completion of Work Report for Routine Site Maintenance Element of Work	(Within 90 days of submittal)

5.2.6 Community Relations Support Element of Work

Activity	Weeks After Lodging
Submit Draft Work Plan for Community Relations Support Element of Work	8
Complete EPA Review of Draft Work Plan for Community Relations Support Element of Work	12
Submit Final Work Plan for Community Relations Support Element of Work	14
Commence Community Relations Support Activities	14
Prepare Draft Work Products for Community Relations Support Element of Work	
Complete EPA Review of Draft Work Products for Community Relations Support Element of Work	
Prepare Final Work Products for Community Relations Support Element of Work	
Submit Completion of Work Report for Community Relations Support Element of Work	(when Settling Defendants determine necessary conditions have been satisfied)
Complete EPA Review of Completion of Work Report for Community Relations Support Element of Work	(Within 90 days of submittal)

Appendix B

RECORD OF DECISION DECLARATION

SITE NAME AND LOCATION

Stringfellow Hazardous Waste Site
Riverside County, California

STATEMENT OF BASIS AND PURPOSE

This decision document for the Stringfellow site in Riverside County, California selects certain interim remedial actions, which have been chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et. seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Contingency Plan, 40 C.F.R. Part 300. The decisions in this ROD are based upon the contents of the administrative record for the Stringfellow site.

The State of California, while given the opportunity to concur upon the remedy selected in this Record of Decision, remains silent.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response actions selected in this ROD, may present an imminent and substantial endangerment to public health, welfare and the environment.

DESCRIPTION OF THE REMEDY

This is the fourth interim action ROD for the site. The first ROD involved initial abatement activities including fencing, erosion control, interim source control, and off-site hauling and disposal of contaminated liquids. The second ROD involved construction of an on-site pretreatment plant to treat contaminated groundwater. The third ROD involved installation of a groundwater barrier system in the lower canyon and installation of peripheral surface channels to direct upgradient surface water runoff. This fourth interim action ROD addresses the groundwater pathway in Zone 1 (the original disposal area) and Zone 4 (the Community) by selecting actions that mitigate further degradation of groundwater at the disposal source and downgradient. The major components of the selected remedies include:

-- Dewatering of the original disposal area, Zone 1, using a system of extraction wells, followed by treatment of the extracted water at the existing mid-canyon pretreatment plant and disposal to a POTW for further treatment; and

-- Installation of a groundwater extraction system in the community to extract and treat contaminated groundwater that

has migrated downgradient to Zone 4, followed by reinjection of the treated water.

In addition, a field test of soil-vapor extraction will be performed to determine the technology's implementability, effectiveness, and costs for removal of volatile organic compounds (VOCs) from Zone 1 soils. Field studies on reinjection of treated groundwater into Zone 2 and 3 also will be pursued.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal or state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective. This remedy utilizes permanent solutions and treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

John Wise

DANIEL W. McGOVERN for
Regional Administrator

9.30.90
Date

1990 RECORD OF DECISION
DECISION SUMMARY
STRINGFELLOW HAZARDOUS WASTE SITE

SITE LOCATION AND DESCRIPTION

The Stringfellow Hazardous Waste Site (also referred to as "site," "Stringfellow," or "Stringfellow site") is located in Riverside County, California, approximately 50 miles east of Los Angeles (Figure 1). The original disposal area is located at the head of Pyrite Canyon in the southern portion of the Jurupa Mountains. The plume of contaminated groundwater, extending approximately 2 miles south of U.S. Highway 60 into the community of Glen Avon, is located within the Glen Avon Basin aquifer, which in the past served as a source of drinking and agricultural water. At present, the Glen Avon Basin aquifer does not serve as a primary source of drinking water for local residents.

The remedial actions selected in this Record of Decision (ROD) address the pathway of primary concern to public health, exposure to contaminated groundwater. These measures offer an opportunity to reduce site-related risk and prevent further degradation of downgradient groundwater.

For purposes of organizing remedial investigation/feasiblity study (RI/FS) information, the site, including its contaminated plume of groundwater, has been divided into four geographic zones (Figure 2).

The term "on-site" used to describe Zone 1 is in reference to the zone as the orginal disposal area, and not to the definition of "on-site" in the National Contingency Plan (NCP). The NCP defines on-site as the "areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action." 40 C.F.R. section 300.5; 55 Fed. Reg. 8817 (3/8/90). Using the NCP definition, the entire plume of contamination, and therefore all zones, is considered "on-site." Pursuant to CERCLA section 121(e), no federal, state or local permit is required for any remedial action conducted entirely on-site as long as the actions are taken within the zone and the substantive portions or the ARAR are addressed.

Zone 1: On-site/Upper Mid-Canyon Area

Zone 1 includes the original 17-acre disposal area in the northern part of Pyrite Canyon, southward to approximately 600 feet below the subsurface barrier. There is no residential or commercial population in this zone. Zone 1 groundwater is contaminated with a large number of organic and inorganic contaminants, including heavy metals.

Zone 2: Mid-Canyon Area

Zone 2 encompasses the portion of Pyrite Canyon that extends from the southern edge of Zone 1 to the existing mid-canyon extraction wells. Zone 2 has no residential population and limited commercial use as a rock quarry. Zone 2 groundwater is moderately to heavily contaminated. The contaminants of concern are primarily soluble, volatile organics, and soluble inorganics. Moving southward through Zone 2, the groundwater contains rapidly decreasing to neglible amounts of heavy metals.

Zone 3: Lower Canyon Area

Zone 3 extends from the mid-canyon extraction wells down to the lower canyon extraction system, north of U.S. Highway 60. There are no private residences in Zone 3, although two active businesses are located within the zone. Zone 3 groundwater is low to moderately contaminated. The contaminants of concern are soluble, volatile organics, and soluble inorganics.

Zone 4: Community of Glen Avon Area

Zone 4 includes the area south of Highway 60 to the leading edge of the plume of site-related contaminated groundwater, approximately 12,000 feet from Zone 1. The affected area is populated with a number of private residences. The contaminants of concern in the groundwater in this zone are relatively low levels of a small number of soluble, volatile organics, and soluble inorganics. At present, the Glen Avon Basin aquifer (within which the Stringfellow plume lies) does not serve as a primary source of drinking water for local residents.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The site was operated by the Stringfellow Quarry Company from August 21, 1956, to November 19, 1972, as a state authorized hazardous waste disposal facility. Approximately 34 million gallons of industrial wastes (primarily from metal finishing,

electroplating and DDT production) were placed in unlined evaporation ponds located throughout the 17-acre disposal area. Some of these wastes migrated downward, entered the groundwater, and moved various distances downgradient. The site was voluntarily closed in 1972.

Removal Activities

In 1975, after declaring the site a public nuisance, the California Regional Water Quality Control Board (RWQCB) began studies to evaluate alternatives for abatement of the risks posed by the site. Between 1975 and 1980, the RWQCB developed reports, conducted a controlled release of contaminants to Pyrite Creek after heavy rains, and removed approximately 6.5 million gallons of liquid wastes and DDT contaminated material.

In 1980, federal involvement was initiated at Stringfellow after an inspection by the U.S. Environmental Protection Agency (EPA) and the U.S. Coast Guard (USCG). The EPA Regional Response Team (RRT) and the USCG Strike Team, using EPA funds, assisted the RWQCB in mitigating the threat of a catastrophic discharge of contaminated water. This response resulted in the removal of approximately 10 million gallons of contaminated water, reinforcement of containment barriers, and improvements to the truck loading area. Other activities completed by the RRT and USCG after 1980 include installation of a french drain, spring box, sumps, and fencing, and improvements to surface drainage.

In 1980, the RWQCB adopted an Interim Abatement Program (IAP) to further address the site. The IAP was designed to contain the wastes and minimize the risk of further contaminant migration. The program included the removal of all surface liquids; partial neutralization and capping of the wastes; installation of a gravel drain network, interceptor wells, monitoring wells, and surface channels; and construction of a clay core subsurface barrier and leachate collection system downgradient of the original evaporation ponds.

In 1981, the California Department of Health Services (DHS) became the lead state agency for Stringfellow-related cleanup, although the RWQCB continued its involvement at the site. The Stringfellow site was placed on the Environmental Protection Agency's (EPA) National Priorities List in 1983.

Interim Remedial Measures

On July 22, 1983, EPA signed its first Record of Decision (ROD) selecting certain interim remedial measures (IRM) and allowing the state to be reimbursed for the earlier abatement actions taken by the RWQCB. Among other actions, the IRM included additional fencing of the site, erosion control, and hauling and off-site disposal of extracted leachate. The IRM were undertaken primarily by DHS using EPA funding under a cooperative agreement. DHS began receiving such funding in 1983.

Fast-Track Remedial Investigation/Feasibility Study

EPA conducted a fast-track remedial investigation/feasibility study (RI/FS) between September 1983 and May 1984. Based primarily upon the fast-track RI/FS, a second ROD was issued by EPA on July 18, 1984. The ROD selected, as an interim measure, the construction and operation and maintenance of a mid-canyon extraction well system and pretreatment plant to remove and treat contaminated groundwater.

The pretreatment system consists of lime precipitation for metals removal, followed by granular activated carbon treatment for removal of the organic contaminants. Under a discharge permit from the Santa Ana Watershed Project Authority (SAWPA), the treated effluent is currently trucked to a local industrial sewer line, the Santa Ana Regional Interceptor (SARI). The effluent then receives additional treatment at a publicly-owned treatment works (POTW) in Orange County. Sludge generated from the pretreatment process is dewatered and taken to an EPA-approved land disposal facility.

Although DHS holds the discharge permit from SAWPA, EPA has entered into an interagency agreement with the U.S. Army Corps of Engineers (the Corps) for field oversight of the pretreatment plant. The Corps, in turn, uses a contractor to operate and maintain the pretreatment plant.

The pretreatment plant's influent, treatment process, and effluent are monitored extensively to ensure quality performance. Since start-up operations, the plant has consistently met the stringent requirements of SAWPA's discharge permit. As of December, 1989, over 30 million gallons of contaminated groundwater have been treated at the plant, and approximately 15,000 pounds of metals and 135,000 pounds of organics have been removed. Pretreatment plant operations are ongoing.

Full-Scale Remedial Investigation/Feasibility Study (RI/FS)

With funding provided by EPA under the cooperative agreement, DHS procured a contractor to conduct a full-scale RI/FS for the Stringfellow site. The RI/FS was initiated in 1984 to characterize the site and to identify and evaluate alternatives for final site cleanup. The FS assessed 86 potentially applicable technologies. Certain of these technologies have been combined into five remedial alternatives (RAs). Detailed evaluation of the five alternatives was performed, as were a number of treatability studies. Although a majority of the work on the RI/FS has been completed, work is still ongoing, including additional soil treatability studies (see "Highlights of Community Participation").

The draft RI report was released to the public in June, 1987, followed by the draft FS report in June 1988. Public meetings on the draft FS report were held in September 1988.

Alternate Water Supply

Analysis of water samples taken during site investigations detected radiation. In response, DHS sampled private drinking water supply wells in the site area. Although the elevated levels of radioactivity were later determined to be naturally occuring and not related to the contamination at the site, in the summer of 1984, in response primarily to continued concern with drinking water quality, DHS initiated an interim program to provide bottled water to nearly 400 Glen Avon residences. Bottled water was supplied to give anyone in identified areas of elevated groundwater radioactivity an alternate supply of domestic water, and to eliminate any domestic dependence on groundwater near the potential influence of contamination from the Stringfellow site. In October 1985, California Senate Bill 1063 provided State funds to hook up residences, which had been receiving State supplied bottled water, to the Jurupa Community Services District. The connections began in June 1986, and were completed in 1989.

Early Implementation Actions

Based upon the ongoing remedial alternative (RA) evaluation in the full-scale RI/FS, additional interim remedial activities were selected in a third ROD issued by EPA on June 24, 1987. These additional actions included: 1) the installation of a groundwater extraction system in the lower canyon area (Zone 3) with treatment of the extracted groundwater at the existing

pretreatment plant; 2) the installation of surface channels around the north end of the original disposal area in Zone 1; 3) the southward extension of the existing eastern and western surface channels; and 4) the reconstruction of the Pyrite Creek channel.

Using cooperative agreement funding, DHS procured contractors to design these actions, and to construct the surface channels around the north end of the orginal disposal area and the southward extension of the existing surface channels. DHS' contractors completed the design in 1988 and the construction of the channels in 1990. A number of potentially responsible parties (PRPs), through an Administrative Order on Consent (AOC), installed the extraction system and reconstructed the Pyrite Creek channel (see "Federal Enforcement," below).

Federal Enforcement

In August and October 1982, EPA issued to over 200 potentially responsible parties (PRPs), General Notice and Demand letters, combined with information requests, under sections 104 and 113 of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The governments' negotiators held an initial meeting with the PRPs in November 1982, followed by a number of settlement meetings. An acceptable settlement agreement was not reached.

On April 21, 1983, the United States and the State of California filed a civil suit in the United States District Court for the Central District of California (U.S. v. J.B. Stringfellow, Jr., et. al., Civil Number 83-2501 JMI (C.D. Cal.)). Eighteen generators, four transporters, and nine owner/operators were named as defendants in the lawsuit. On June 4, 1987, the District Court granted the government's motion for partial summary judgment against fifteen of the defendants on the issue of liability under section 107 of CERCLA. A sixteenth defendant recently has been added to the judgment. A case management order divides the litigation into three phases: 1) liability, 2) remedy/damages, and 3) cost allocation. Litigation is ongoing.

To facilitate legal discussions with the governments, following suit initiation, the defendants formed a steering committee. A technical subcommittee was also formed and meets with EPA and DHS technical staff approximately once every quarter to exchange technical information. The community's technical advisor is invited to these meetings. Local and other state government representatives are also invited depending on the

agenda covered by the technical discussions.

In May 1988, sixteen of the defendants agreed, in an Administrative Order on Consent (AOC), to construct certain of the interim actions that were selected in the third ROD issued by EPA on June 24, 1987. The AOC did not include the design and operation and maintenance of the groundwater extraction system, the installation of the northern channels or the southward extension of the existing channels. Rather, using cooperative agreement funding, DHS' contractors completed the design and constructed the channels. Operation and maintenance of the pretreatment plant resides with EPA.

Proposed Remediation Plans

Community Groundwater Proposed Plan

In June 1988, EPA and DHS released a Proposed Plan to address site-related groundwater contamination in the community of Glen Avon (Community Groundwater Proposed Plan). The Plan proposed to extract, treat (through air stripping and reverse osmosis), and reinject the treated groundwater. The public had an opportunity to comment on the Community Groundwater Proposed Plan from June to November 1988. Two public meetings addressing the Plan were held in September 1988.

Overall Proposed Plan

At one of the public meetings in September 1988, Riverside Representative George Brown held an open congressional hearing on the Stringfellow site. At the hearing, the Agencies' agreed to conduct additional soil treatability studies before making a decision on the final remedy for Zone 1. Testimony by members of the community and the U.S. Office of Technology Assessment reflected the belief that certain soil treatment technologies should be further evaluated because of possible technical developments since the issuance of the draft FS report.

In response to the hearing and to public input, EPA and DHS developed a new remedial alternative, RA6. Consequently in February 1989, the Agencies released for public comment a second plan (Overall Proposed Plan) proposing to implement RA6. EPA and DHS also released a fact sheet in April 1989 reflecting recalculated estimated groundwater flow in the community area (Zone 4). The April fact sheet described the revised estimated cost comparisons and cleanup times for the Community Groundwater Proposed Plan, and for the RAs considered in the draft FS report.

The proposed remedy, RA6, of the Overall Proposed Plan included, for Zones 2 - 4, the long-term continuation of downgradient plume management activities. For Zone 1, the Plan proposed to dewater the area, use soil-gas extraction (hereinafter referred to as "soil-vapor extraction," or "SVE") for removal of volatile organic compounds (VOCs) if tests proved favorable, complete additional soil treatability studies, and install an improved cap.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The community of Glen Avon has been kept actively informed of the cleanup progress and actions taken at the Stringfellow site. One of the primary means of keeping the public informed has been through the DHS publication of the "Stringfellow Update." Updates have been published approximately every other month since late 1984, and are mailed to over 3,000 Glen Avon residents and interested parties. The Community Groundwater Proposed Plan was released through the June/July 1988 "Stringfellow Update," and the Overall Proposed Plan through the February/March 1989 "Stringfellow Update."

Public Comment Periods

EPA and DHS sought public comment on the draft RI/FS reports and on the two proposed plans. The comment period for the draft RI report began in June and ended in October 1987. The public had an opportunity to comment on the draft FS report and Community Groundwater Proposed Plan from June through November 1988. The comment periods for the Overall Proposed Plan and the April fact sheet began in March 1989, and April 1989, respectively. The comment period for both documents closed in June 1989.

Public Meetings

Public meetings and workshops have been held in and near Glen Avon to present cleanup information and to receive input from the public. Public meetings on the draft FS report and Community Groundwater Proposed Plan were held in Riverside and Orange Counties in September 1988. A public meeting on the Overall Proposed Plan was held in Riverside County in March 1989.

In addition to public meetings, the Stringfellow Advisory Committee (SAC)---an amalgum of community, government, and private interests---meets once a month to discuss cleanup progress at the site, and the remedial activities being pursued by EPA and DHS. The SAC is comprised of a community leader,

elected representatives, local officials, and EPA and DHS staff and management. SAC meetings are open to the public.

Community Input: ROD

Public comment, in various forums, indicated the community's strong belief that the final remedial decision for Zone 1 should be deferred until after the completion of additional soil treatability studies. Nevertheless, pending the studies, the community supported the issuance of a separate ROD to address the cleanup of the groundwater underlying the Glen Avon area (Zone 4), and the dewatering and soil-vapor extraction actions in Zone 1.

The Agencies agreed with the suggestions provided by the community, and have adopted its strategy as reflected in this ROD (see "Scope and Role of Response Actions of This ROD"). The final remedial decisions on the long-term plume management, and the final response actions for Zone 1, will be addressed in a subsequent ROD, following completion of the RI/FS, including the additional soil treatability studies.

Community Input: Significant/Episodic Storm and Seismic Events

In response to community concerns regarding flooding and possible exposure to contaminants via the surface water pathway, EPA and DHS are evaluating the potential effect significant/episodic storm or seismic events may have on the site's engineered structures and downgradient community. After a conceptual plan for the analysis was presented to the public for comment in March 1990, the Agencies' proposed a detailed analytical approach and again sought public comment. EPA and DHS will share their written analyses for discussion with the SAC.

Community Input: Additional Soil Treatability Studies

Following the Agencies' agreement to conduct additional soil treatability studies for Zone 1, EPA and DHS prepared discussion papers on the purpose and objectives of the studies. EPA's Office of Research and Development (ORD) is providing technical expertise and analysis to assist the Agencies in determining the implementability, costs, long-term and short-term effectiveness, and reduction in contaminant toxicity, mobility, and volume (TMV) of the soil technologies being considered. The information gained from these treatability studies, along with the alternatives currently in the draft FS report, will be evaluated by EPA and DHS (using the nine superfund criteria described under

"Summary of Comparative Analysis") in making the final remedial decision for the Zone 1 area. The treatability studies process is currently under discussion between EPA, DHS, and the community.

Information Repositories

Documents issued for public comment, such as the draft RI/FS reports, proposed plans, and other information relevant to the Stringfellow site remediation and decision-making process are routinely transmitted to and made available for inspection at a number of information repositories located in Riverside and Orange Counties. The Administrative Record for this ROD will be located at EPA's offices in San Francisco, DHS' offices in Sacramento, and the Glen Avon Branch Library.

Responsiveness Summary

During public comment periods and associated public meetings, residents, elected officials, community organizations, the community technical advisor, and the PRPs submitted comments on the draft RI report, draft FS report, and two proposed plans. The attached responsiveness summary responds to those comments relevant to the remedial decisions selected in this ROD.

SCOPE AND ROLE OF RESPONSE ACTIONS IN THIS ROD

The primary pathway of concern for the response actions selected in this ROD is groundwater. As described in the Community Groundwater Proposed Plan, the ROD incorporates the decision to remediate the site-related contaminated plume of groundwater in the community area (Zone 4). In addition, the ROD selects two source control measures for Zone 1 identified in the Overall Proposed Plan: 1) dewatering, and 2) field testing of soil-vapor extraction (SVE). These interim response actions are limited in scope, and after the RI/FS and additional soil treatability studies are completed, will be followed by selection of the final site remedy. Accordingly, while the Agencies have identified certain contaminant-specific remediation goals in this ROD, cleanup levels for the site as a whole cannot be finalized until the long-term plume management of the zones is decided. The response actions selected for Zone 4 in this ROD are, therefore, interim decisions, although the Agencies do not envision any additional selection of cleanup technologies for this zone.

SUMMARY OF SITE CHARACTERISTICS

This section summarizes information in the draft RI report that is relevant to the remedial actions considered in this ROD.

During operation of the Stringfellow site, liquid wastes were placed in unlined ponds located throughout the 17-acre disposal area. Some of the wastes migrated downward, entered the groundwater, mixed with clean groundwater, and moved various distances downgradient, depending upon the chemical and physical interactions with the geologic units.

Groundwater contamination extends from Zone 1 into the community of Glen Avon, Zone 4, as shown in Figure 3. The leading edge of the contaminant plume is defined by the presence of trichloroethylene (TCE) in groundwater, and is approximately 11,000 to 12,000 feet south-southwest of Zone 1 at the intersection of Agate Street and Jurupa Road in Glen Avon. The plume width in the Glen Avon area is up to 900 feet.

Zone 1

The soil/fill material in Zone 1 is contaminated with a variety of chemicals, including chlorinated solvents, pesticides, PCBs, heavy metals, acidic materials, and volatile and semi-volatile organic pollutants. The predominant organic contaminant identified in Zone 1 soils is para-chlorobenzene sulfonic acid (p-CBSA), a by-product of DDT manufacturing. Volatile organics (e.g., TCE and chloroform) constitute less than 1 percent of the soil contaminant mass. Metals such as nickel, chromium, and cadmium are present. Sulfates are also found in high concentrations.

The inorganic and organic contaminants which have migrated from the soils into the groundwater in this zone, and which constitute the greatest percentage of the contamination, are the sulfates and p-CBSA, respectively. Based on available information and studies, p-CBSA is not considered to be toxic to human health. Sulfates can be harmful in high concentrations. Metals, such as cadmium, chromium, and nickel, and VOCs, such as chlorobenzene, chloroform, and trichloroethylene are also found in the Zone 1 groundwater. The VOCs constitute less than 1 percent of the dissolved organic carbon in the groundwater, but many individual components exceed federal/state drinking water levels. Mean concentrations of at least eight inorganic constituents and nine organic constituents exceed federal maximum contaminant levels (MCLs), secondary maximum contaminant levels (SMCLs),

maximum contaminant level goals (MCLGs), or adjusted ambient water quality criteria (AWQC): cadmium, chromium, copper, fluoride, iron, manganese, nitrate, zinc, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethylene, 1,1,2,2-trichloroethane, tetrachloroethylene, trichloroethylene, and xylene.

Groundwater contamination is prevalent in all three groundwater strata (alluvium, decomposed granite, and bedrock) in Zone 1.

Zone 4

The draft RI report found that in Zone 4, the only site-related organic groundwater contaminant that exceeds federal maximum contaminant levels (MCLs) for drinking water is TCE. The federal MCL is 5 ug/l. TCE, as measured in 1985 and 1986 and reported in the draft RI report, reached as high as 436 ug/l in this zone. At the plume's leading edge (Agate and Jurupa Streets) TCE was detected at less than the MCL.

Chloroform is also found in excess of health-based levels. In the absence of a federal MCL specific to chloroform, the Agencies are looking to the concentration, 6.0 ug/l, associated with an excess cancer risk of 10^{-6} as the level that is protective of human health. This concentration coincides with the State of California's Action Level. Chloroform concentrations as measured in 1985 and 1986 and reported in the draft RI report, reached as high as 32 ug/l in the Zone 4 plume.

Other dissolved organic contaminants measured above background in Zone 4 include chlorobenzene, 1,2-dichlorobenzene, and p-CBSA. With respect to the first two contaminants, the levels found in the groundwater are lower than proposed federal MCLs (the proposed MCL for chlorobenzene is .1 mg/l and for 1,2 dichlorobenze is .6 mg/l). There are no standards or guidelines for p-CBSA, but as discussed earlier, p-CBSA has not been determined to be toxic to human health.

With respect to inorganic compounds, the findings of the RI indicate that there is no heavy metal contamination in Zone 4 groundwater. As pH increases, heavy metals in the groundwater precipitate from solution or react with aquifer materials approximately 1,000 feet downgradient of the subsurface barrier in Zone 1. The inorganic contaminants found in the downgradient zones are sulfates and nitrates. Within the plume of contaminated groundwater, concentrations of these contaminants are

as much as 4 to 5 times higher than within the surrounding aquifer. Plume concentrations of nitrates and sulfates exceed the federal MCL and proposed MCL, respectively. With respect to nitrates, currently available data indicate that anthropogenic background levels in the community area also are elevated and exceed the federal MCL.

The contaminants in Zone 4 are predominantly confined to the alluvium (uppermost) groundwater stratum. Groundwater contamination underlying the community can be described three dimensionally as a relatively narrow plume, increasing from approximately 300 to as much as 900 feet wide, and extending to as deep as 100 feet below the surface. TCE contamination has migrated 11,000 to 12,000 feet southwest of Zone 1, and is migrating at an approximate effective rate of 250 feet per year (assuming that groundwater and its dissolved TCE are moving at the same rate).

Zone 4 is highly populated, and contains private residences with operable water wells. Few private wells have been found to be contaminated, and none are presently used for drinking water.

SUMMARY OF SITE RISKS

The baseline risk assessment conducted as part of the RI examined human ingestion of contaminated groundwater and surface water, ingestion of contaminated soil, and inhalation of airborne contaminated soil particles and volatile compounds. Because this ROD focuses on remedial actions affecting the groundwater pathway, the risk assessment findings for this pathway alone are summarized.

Groundwater Pathway

The findings of the RI risk assessment indicate that the exposure pathway of primary concern is the potential human exposure to contaminated groundwater. As discussed earlier, the groundwater beneath Zone 1 is contaminated with a large number of soluble organic and inorganic contaminants, including heavy metals. Moving southward along the plume to Zone 2, the groundwater is moderately to heavily contaminated with soluble, volatile organics and soluble inorganics. In this zone, the heavy metals begin to rapidly decrease and become neglible before entering Zone 3. The Zone 3 groundwater is minimally to moderately contaminated with soluble, volatile organics, principally TCE and chloroform, and soluble, inorganics, principally nitrates and sulfates. At the downgradient end of the plume in Zone 4, the

concentrations of the carcinogenic compounds (principally TCE and chloroform), and of the inorganic compounds (principally nitrates and sulfates) have significantly decreased from Zone 1.

Contaminants of Concern

TCE and chloroform were selected as the basis for the public health evaluation of the groundwater exposure pathway because they are the only carcinogenic chemicals found above federal MCLs or health-based levels in the community plume, and thus presented the greatest human exposure risk.

Exposure Assessment

The Stringfellow plume of contaminated groundwater lies within the Glen Avon Basin aquifer. The aquifer is not currently used as a drinking water supply for local residents. However, it is considered to a be a potential source of drinking water and is located within a groundwater subbasin (Chino III) with Class I characteristics.

Toxicity Assessment and Health Effects

TCE has a relatively low acute toxicity, but exposure to high doses can cause central nervous system depression, long-term neurological effects, dermatitis, and peripheral neuropathy. TCE is a probable human carcinogen and a proven animal carcinogen. Chloroform can cause nausea, dizziness, and acute central nervous system depression, as well as chronic liver and kidney damage. This substance has been listed as a probable human carcinogen by EPA.

Cancer potency factors have been developed by EPA's Carcinogenic Assessment Group for estimating the excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. The cancer potency factor, expressed in units of $(mg/kg/day)^{-1}$, is multiplied by the average intake of a potential carcinogen to provide an estimate of the upper bound lifetime excess cancer risk associated with exposure at that intake level. The term "upper bound" reflects the conservative nature of the risks calculated from the cancer potency factor, which are unlikely to underestimate the actual cancer risk. The cancer potency factors are derived from the results of human epidemiological studies or chronic animal bioassays to which uncertainty factors have been added. The cancer potency factor for TCE is 1.1×10^{-2} $(mg/kg/day)^{-1}$. The cancer potency factor for chloroform is 8.1×10^{-2} $(mg/kg/day)^{-1}$.

The toxicity of nitrate in humans is due to the body's reduction of nitrate to nitrite. This reaction takes place in saliva of humans at all ages and in the gastrointestinal tract of infants during the first three months of life. The toxicity of nitrite is demonstrated by vasodilatory/cardiovascular effects at high dose levels and methemoglobinemia at lower dose levels. Methemoglobinemia is an effect in which hemoglobin is oxidized to methemoglobin resulting in asphyxia. Infants up to 3 months of age are the most susceptible subpopulation with regard to nitrate. 50 Fed. Reg. 46973 (November 13, 1985).

There is no evidence of adverse chronic health effects in animals or humans from exposure to sulfate in drinking water, 50 Fed. Reg. 46979 (November 13, 1985). The only adverse effects noted from exposure to high levels of sulfate are diarrhea and dehydration. Infants appear to be more sensitive to sulfate than adults. There are limited data on the acute effects of sulfate. Information compiled from questionnaires indicated that at concentrations of sulfate above 1,000 mg/l, the majority of respondents noted a laxative effect. Animal studies suggest that sulfate is not mutagenic, carcinogenic or teratogenic in mammals. 55 Fed. Reg. 30382 (July 25, 1990).

Risk Characterization

The risk characterization quantifies potential risks to human health in the event that the contaminated plume of groundwater is used as a residential source of drinking water. The site-specific risk values are estimated by incorporating information from the exposure assessment and the toxicity assessment for the identified contaminants of concern. Excess lifetime cancer risks are determined by multiplying the intake or exposure level by the cancer potency factor.

Although no one is currently using the contaminated plume of groundwater as a domestic water supply, ingestion of the groundwater currently underlying the community zone (Zone 4) is associated with an excess cancer risk of approximately 10^{-4}. This risk increases by two orders of magnitude to approximately 10^{-2} moving upgradient from Zone 4 to Zone 1.

The exposure assumptions of the risk assessment---that an individual weighing 70 kilograms will drink 2 liters of water per day for 70 years---were used to calculate the risks associated with use of this water in the community by current and future residents. In addition, the risk calculation incorporated a range of concentrations representing the maximum and minimum

measured levels for TCE and chloroform.

Another indication of risks associated with human use of the contaminated plume of groundwater is comparison to health-based ARARs, such as MCLs, MCL goals, and State action levels. Plume concentrations are greater than ARARs for TCE, chloroform, nitrates, and sulfates.

Zone 1 Risk Reduction

The principal threat from Zone 1 derives from the presence of a large mass of water-soluble contaminants that can migrate and contaminate downgradient groundwater. Water-soluble contaminants above health-based levels which have migrated the farthest are the volatile organic compounds (VOCs), principally TCE and chloroform, and two inorganic compounds, nitrates and sulfates. Although VOCs represent less than one per cent of the mass of contaminants present in Zone 1, they are significant because of their relative mobililty, and because they are the major toxic organic contaminants found in the downgradient groundwater plume.

Zone 4 Risk Reduction

Response action in the community area is necessary to reduce the human health risk from contaminants in the plume of groundwater to levels that are protective of human health. Response action is also expected to prevent the further migration of the contaminated groundwater plume. Without remediation, continued plume migration could further contaminate the Glen Avon aquifer, as well as parts of the larger Chino III subbasin. Additional risks exist from exposure to contaminated groundwater through ingestion and, to a lesser extent, through dermal contact and inhalation of volatilized chemicals.

DESCRIPTION OF ALTERNATIVES

The following sections discuss the alternatives considered for response actions in Zones 1 and 4. The description of the alternatives, as well as the summaries of the comparative analysis, reflect the interim and limited nature of the Agencies' response action decisions in this ROD.

Zone 1

Dewatering

Active dewatering of the Zone 1 area is expected to reduce the threat of further contamination of groundwater, and to remove substantial amounts of VOCs and other water-soluble, mobile contaminants currently in the groundwater. Lowering the water table in Zone 1 is also expected to reduce the long-term health risks by decreasing the volume and mobility of VOCs and other soluble contaminants. Dewatering will serve to prepare the subsurface for soil-vapor extraction (SVE) and/or other treatment technologies that may, as a result of currently ongoing treatability studies, be selected in the final ROD.

Dewatering: No Action Alternative

The "no action" alternative involves no further effort to control the source or the migration of site-related groundwater contamination underlying Zone 1. Inaction with respect to Zone 1 groundwater will lengthen the time to achieve cleanup in all downgradient zones.

Dewatering: Gallery Drainage Tunnel (Adit) System

As described in the draft FS report, one way to dewater Zone 1 is through a gallery drainage tunnel, or adit. The oval-shaped tunnel would be routed around Zone 1 and be constructed in competent bedrock. The gallery would include two sets of drain holes drilled laterally, one set to drain contaminated groundwater from beneath the site, and one set to redirect uncontaminated groundwater away from the site. The drained water would be piped to the existing mid-canyon pretreatment plant for removal of metals and organic compounds. The treated effluent would then be transported to the Santa Ana Regional Interceptor (SARI) where it would be piped to a POTW for further treatment.

Using the gallery system, initial dewatering to bedrock is anticipated to take one year, and to remove over 50% of the soluble organics and inorganics estimated to be present in the Zone 1 groundwater. Depending upon the Agencies' final remedial decision for Zone 1, maintaining the lowered water table level could be required in perpetuity. The estimated costs from Appendix A to the draft FS report, are presented, below.

Capital cost:	$ 27,000,000
Operations/Maintenance (first year):	500,000

Dewatering: Surface Extraction Wells

Another way to dewater Zone 1 is through a series of groundwater extraction wells. Depending upon the cumulative extraction rates of these wells and drawdown characteristics, wells would iteratively be added to the dewatering matrix. Installation, followed by a review of effectiveness, would guide the location and placement of subsequent wells. Based upon the estimates of well yields and spacings required by the rock structure and the continuity of the fracture system, the draft FS report conceptualized a total of 18 to 36 wells. The actual number of wells, however, may not be confirmed until most or all of the wells have been installed and the system has been tested. The extracted groundwater would be treated at the existing mid-canyon pretreatment plant, transported to the SARI line, and, ultimately, to a POTW for further treatment.

As with the gallery system, initial dewatering to bedrock is anticipated to take one year, and to remove over 50% of the soluble organics and inorganics estimated to be present in the Zone 1 groundwater. Depending on the outcome of the Agencies' final remedial decision for Zone 1, maintaining the lowered water table level could be required in perpetuity. The revised estimated costs, including costs associated with maintaining the dewatering system in perpetuity, are presented, below.

Capital cost:	$ 4,000,000
Present Worth (7% discount rate):	47,000,000

Zone 4

Cleanup of the site-related contaminated groundwater in the community area (Zone 4) is a component of all remedial alternatives (RAs) evaluated in the FS report, except for the "no action" alternative.

Zone 4 Groundwater Cleanup: No action

This alternative involves no further action to clean up the site-related contaminated groundwater in the community area, or to prevent the further migration of the contaminant plume.

Zone 4 Groundwater Cleanup: Extraction, No Treatment, Disposal to SARI

This alternative involves extracting contaminated water from wells placed in the Zone 4 plume. As the contaminated water is extracted, uncontaminated groundwater from the surrounding aquifer will naturally flush the plume clean over time. The extracted groundwater would be discharged to the SARI industrial sewer line via an anticipated 15-mile pipeline, extending from Zone 4 to the sewer drop point. The chemical quality of the extracted water would be expected to be within the present quality limits of the industrial sewer discharge permit for the mid-canyon pretreatment plant, and therefore should not require further treatment. If the extracted water exceeds the water quality limits of the discharge permit, or if discharge to the industrial sewer is not permitted without treating the VOCs, the VOCs would be removed prior to disposal. For purposes of estimating costs, air stripping was assumed to be the treatment technology for removing VOCs.

Currently, under the SAWPA permit a maximum volume of 187,000 gallons per day can be discharged to the SARI line. The discharge permit would likely have to be modified to allow for the much larger volume expected to be generated by implementing this alternative.

Based upon a revised flow rate of 160 gpm, this alternative is estimated to reduce TCE to the federal MCL of 5 ug/l in approximately 75 years. The estimated costs are shown, below.

Capital costs (pipeline extension, no treatment):	$ 11,000,000
Present Worth (7% discount rate):	48,000,000
Capital costs (pipeline extension, air stripping):	$ 12,000,000
Present Worth (7% discount rate):	52,000,000

Zone 4 Groundwater Cleanup: Extraction, Treatment, Reinjection

As with the previous alternative, this alternative involves extracting contaminated groundwater along the Zone 4 plume. Unlike the previous alternative, this alternative involves replacement of the extracted and treated groundwater by reinjection along the periphery of the contaminant plume. The extraction and reinjection wells would be located and operated in a way to keep the existing contaminated groundwater plume hydraulically contained. A closed system would be sought in which contaminated

groundwater flow is from less contaminated toward more contaminated groundwater.

Pending confirmation by design studies, this alternative is envisioned to involve the following processes:

- o Extraction of contaminated groundwater.
- o Treatment to remove volatile organic contaminants (air stripping).
- o Treatment to remove inorganic contaminants prior to reinjection (reverse osmosis (RO)).
- o Reinjection of treated water along the periphery of the plume.
- o Disposal of RO concentrate to the SARI line.

Reinjection of the treated water is expected to hasten clean up of the Zone 4 plume by a factor of three. The SAWPA permit may need to be modified to allow for an increased volume that could be generated by implementing this alternative. Based on a revised flow rate of 430 gpm, the estimated costs of this alternative are provided, below.

Capital costs (air stripping, RO, pipeline extension):	$ 19,000,000
Present Worth (7% discount rate):	$ 68,000,000

DESCRIPTION OF ALTERNATIVES: COMPLIANCE WITH OTHER LAWS AND ARARs

Under Section 121(d) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. section 121(d), remedial actions must attain a degree of cleanup that assures protection of human health and the environment. Additionally, remedial actions that leave any hazardous substance, pollutant, or contaminant on-site must meet a cleanup level or standard of control that at least attains federal and more stringent state standards, requirements, criteria, or limitations that are "applicable or relevant and appropriate" under the circumstances of the release. These requirements, known as "ARARs", may be waived in certain instances. CERCLA section 121(d)(4). To be considered as ARAR, a requirement must be promulgated, 40 C.F.R.section 300.400(g)(4); be sub-

stantive rather than administrative, 55 Fed. Reg. 8756-57 (March 8, 1990); and be a requirement of an "environmental" law as provided in CERCLA section 121(d)(2)(A)(i).

"Applicable" or "relevant and appropriate" requirements are defined fully in the revised National Contingency Plan (NCP), 55 Fed. Reg. 8666-8865 (March 8, 1990), 40 C.F.R. Part 300. In sum, "applicable" requirements are those standards, criteria, or limitations promulgated under federal or state environmental law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site. Where a promulgated standard, criteria, or limitation is not directly applicable, it may be "relevant and appropriate" if, in the exercise of the Agencies' discretion, it addresses problems or situations sufficiently similar to those encountered to be well-suited to the particular site.

ARARs may be (a) "chemical-specific," which are generally health- or risk-based numerical values or methodologies that set limits upon concentrations of specific contaminants in the environment; (b) "location-specific," which are generally restrictions upon certain types of activities because of existing site characteristics (e.g. wetland, floodplain, historic site); or (c) "action-specific", which are technology or activity based restrictions triggered by the type of remedial action under consideration. In addition to ARARs, EPA or the State may, as appropriate, identify other advisories, criteria, or guidance, whether or not promulgated, to be considered for a particular site. While not mandatory, the Agencies may identify and rely upon TBCs, as they are known, to assist in determining what cleanup level is protective or to otherwise assist the design of Superfund remedies.

The response actions considered and selected in this ROD are interim measures designed to mitigate site-related risks to human health and the environment and prevent further groundwater degradation. Accordingly, the ARARs discussion below focuses primarily upon compliance with those ARARs and environmental requirements specific to the interim actions selected. At the time the Agencies finalize remedial action decisions for the site, compliance with ARARs and final selection of cleanup levels will be fully addressed.

Zone 1: Compliance With Other Laws and ARARs

ARARs

For the action of dewatering, the federal Clean Water Act's pretreatment standards, authorized under section 307(b), 33 U.S.C. section 1317(b), and 40 C.F.R. Part 403; and the National Pollutant Discharge Elimination System (NPDES) standards, under section 311, 33 U.S.C. section 1317, are applicable to the off-site discharge of treated water to the SARI sewer line. Those standards applicable are currently set forth in the SAWPA permit governing effluent discharges from the existing mid-canyon pretreatment plant. Disposal of the extracted water from the dewatering system will be in compliance with the existing permit standards and any relevant modifications. There are no location-specific applicable or relevant and appropriate requirements pertinent to the interim actions considered for Zone 1 because it is not within 200 feet of a fault nor within a 100-year floodplain.

Recently EPA promulgated land disposal restrictions, including treatment standards for the Third Third scheduled wastes under the Resource Conservation and Recovery Act, 42 U.S.C. section 6924 (m) and 40 C.F.R. Part 148 (55 Fed. Reg. 22520-720 (June 1, 1990)). The Agencies are currently evaluating these standards and are aware that they may be applicable to the disposal of the treatment sludge at the pretreatment plant. While compliance with the Third Third, if necessary, may increase the costs of disposal associated with the dewatering alternative, the Agencies' preliminary analysis indicates there will be no effect upon the decision to dewater Zone 1.

Identification and selection of final cleanup levels for the chemical contaminants in the soil and groundwater in Zone 1 will be made at the time final remedial actions are selected for the Zone. Dewatering Zone 1 neither precludes achieving, nor is inconsistent with meeting, any chemical-specific cleanup levels that may be chosen for site-related contaminants in Zone 1.

Zone 4: Compliance With Other Laws and ARARs

ARARs

No location-specific ARARs have been identified for the action alternatives considered for Zone 4 groundwater cleanup.

For the first alternative (extraction, no treatment, disposal to the SARI), the Clean Water Act pretreatment and NPDES standards, as discussed above under the dewatering alternative, are applicable to the disposal of the extracted water to the SARI. These standards, as currently set forth in the existing SAWPA permit, are likely to require modification because of the expected increase in discharge volume associated with this alternative. This alternative, if implemented, will comply with applicable permit standards, including any necessary modifications.

For the second alternative (extraction, treatment, reinjection), the Agencies have identified potential ARARs for both treatment and reinjection. With respect to air stripping, the extracted water will be treated at the mid-canyon pretreatment plant to meet the federal drinking water MCL for TCE (5.0 ug/l) and the 10^{-6} risk level for chloroform (6.0 ug/l). In addition, the South Coast Air Quality Management District's (SCAQMD) Regulation XIII, federally enforceable under the Clean Air Act section 110, 42 U.S.C. section 7410, is applicable to emissions of VOCs from new sources. The SCAQMD recently promulgated a more stringent version of Regulation XIII that is applicable. Regulation XIII requires best available control technology (BACT) when incremental emissions of various air pollutants, including volatile organic compounds, exceed a certain threshold.

An additional guideline to be considered (TBC) for air is the SCAQMD's Rule 1167. Because a recent court ruling stayed enforcement of the Rule, it is not considered ARAR. Nevertheless, the purpose of the Rule is to control emissions of VOCs as precursors to ozone formation in the South Coast Basin, where the Stringfellow site lies. The Rule requires that all air stripping facilities treating contaminated groundwater that emit more than one pound per day of total VOC emissions install controls capable of reducing air emissions by 90 percent. Consideration of Rule 1167 in addition to the SCAQMD's Regulation XIII VOC emissions standards is warranted by, and consistent with, EPA OSWER Directive 9355.0-28, "Control of Air Emissions From Superfund Air Stripers at Superfund Groundwater Sites." In nonattainment areas like the South Coast Air Basin, which is acknowledged to have the worst ambient air quality in the nation, the Directive seeks to incorporate the use of controls for air strippers. Consequently, the air stripping treatment system will employ activated carbon adsorption at the air-stripper off-gas to meet ARARS and control VOC air emissions.

For the action of reinjection, the Underground Injection Control (UIC) program with respect to Class V Wells, pursuant to the Safe Drinking Water Act and 40 C.F.R. Part 144, Subpart B, and the California Regional Water Quality Control Board's "Water Quality Control Plan, Santa Ana River Basin" (Basin Plan) provide the interim action ARARs for TCE, nitrates, and sulfates. The UIC program requires that reinjection into Class V Wells, such as those at the site, may not cause a violation of an existing drinking water standard (MCL) under the SDWA, in this case 5 ug/l for TCE and 10 mg/l as N for nitrates. With respect to nitrates, the California Basin Plan's water quality objective of 11 mg/l as N is the State standard directly applicable to the reinjection of nitrates. Nitrate concentrations in the receiving formation are believed to exceed the drinking water standard, and thus reinjection of treated water should not cause a violation of the SDWA requirements under the UIC program. Nevertheless, the UIC standards are relevant to potential underground sources of drinking water and appropriate action ARARs under the circumstances where the effectiveness of the technology considered for removal of nitrates is anticipated to produce injectate that meets or exceeds either the UIC level of 10 mg/l, or the applicable Basin Plan objective of 11 mg/l. Consequently, both TCE and nitrates will be reinjected at the UIC program levels (5 ug/l and 10 mg/l as N, respectively).

In the absence of a federal standard for sulfates the California Basin Plan's water quality objective of 110 mg/l is directly applicable to the action of reinjection. Treated water from the Zone 4 extraction system will be reinjected at the Basin Plan objective.

Remediation Goals

The Zone 4 response action decisions made in this ROD are considered interim for the reasons noted below. Nevertheless, the Agencies do not expect to select further Zone 4 response actions beyond those chosen in this ROD. The Agencies are, therefore, identifying remediation goals for the contaminants found in the Zone 4 groundwater. The remediation goals, although being set here for Zone 4 plume cleanup, will not be finalized until the decision for long-term management of the contaminated groundwater in all downgradient zones is made.

Identification of remediation goals in this ROD for the community area (Zone 4) is based upon CERCLA's objective of restoring and protecting usable groundwater to the extent possible. The Stringfellow plume is located within the Chino III subbasin,

which is a Class I aquifer having the potential for, and designated use as, a potential source of drinking water. Under these circumstances, the NCP indicates that the Agencies should look to the maximum contaminant levels (MCLs) and maximum contaminant level goals (MCLGs) under the Safe Drinking Water Act (SDWA), 42 U.S.C. section 300f, as potential cleanup levels. While these standards are not directly applicable because the community residents are not currently relying upon the groundwater as a drinking water source, they are relevant and appropriate health-based standards. In the absence of a federal standard, the Agencies looked to more stringent state standards or, if unavailable, a concentration based upon a 10^{-6} carcinogenic risk level.

The only site related organic contaminants in Zone 4 that were found in excess of health-based levels are TCE and chloroform. For TCE, the federal MCL and state promulgated standard are the same, at 5.0 ug/l. Although the MCLG for TCE is zero, EPA has determined that a zero-based MCLG is not appropriate as a remediation goal. Therefore, the Agencies have identified the remediation goal for TCE in Zone 4 as 5.0 ug/l.

While there is neither an MCL nor an MCLG specific to chloroform, there is a federal MCL of 100 ug/l for total trihalomethanes, which includes chloroform. The standard, however, is based on an analysis evaluating the health benefits of chlorinating public drinking water supplies against the detrimental effects of the production of trihalomethanes as a result of chlorinating those supplies. The Agencies, therefore, determined that the MCL for trihalomethane is not an ARAR for a nonchlorinated source such as the Stringfellow contaminant plume. Since no other ARAR was available, the concentration, 6.0 ug/l, associated with an excess cancer risk of 10^{-6} was identified as the cleanup goal for chloroform. This concentration coincides with the State of California Action Level. In identifying the goal, the Agencies have concluded that a chloroform concentration in the plume of 6.0 ug/l is appropriate for the circumstances of the Stringfellow site, and will be protective of human health.

Based on available data, the Agencies believe that the remediation goals for TCE and chloroform can be achieved. The Agencies do recognize, however, that recent studies by EPA suggest that groundwater extraction and treatment are not, in all cases, completely successful in reducing contaminants to health-based levels. If it becomes apparent during operation of the system, that contaminant levels have ceased to decline or are declining at a much slower rate than anticipated, and are remaining at levels higher than the remediation goal, such goal and/or

the selected remedy may be reevaluated at the discretion of the Agencies.

Both nitrates and sulfates are present in the Zone 4 contaminant plume. The federal MCL (10 mg/l as N) for nitrates has been identified as a potentially "relevant and appropriate" Zone 4 remediation goal. In the course of reviewing and evaluating the public comments on the Community Groundwater Proposed Plan and draft FS report, the Agencies have determined that setting such a cleanup goal presents a problem. While existing data indicate that nitrate levels within the plume exceed the federal MCL, the data also suggest that, in many locations, the background concentration of nitrates also exceed this standard. The situation raises questions as to the technical practicability of achieving a cleanup goal which is lower than background conditions. Based upon present knowledge, the Agencies are considering invoking an ARAR waiver to allow the remediation goal for nitrates to be set at background concentrations rather than at the federal MCL. Because the issue has not been the subject of focused discussion and public comment, the Agencies will defer finalizing the remediation goal for nitrates until after an opportunity for public input.

With respect to sulfates, the EPA has recently issued a proposed rule under SDWA which now identifies sulfate drinking water concentrations that pose a threat to human health. Prior to this proposal, sulfate concentrations were set as a non-enforceable secondary MCL for the aesthetic value of drinking water. The proposed rule is a potential ARAR, which will be considered in setting the final remediation goal for sulfates in the contaminant plume.

SUMMARY OF COMPARATIVE ANALYSIS

As noted previously, the remedial actions described in this ROD are interim measures. Accordingly, the comparative analysis between the interim measures considered here is limited to ensuring that the chosen alternatives are consistent with any potential final remedy and the Superfund criteria relevant to the interim measure being considered. The draft FS report provides additional detailed analysis of remedial alternatives. To facilitate the interim analysis here, the nine criteria are identified, below.

Nine Superfund Criteria

1. Overall protection of human health and the environment.
2. Compliance with ARARs.
3. Long-term effectiveness.
4. Reduction of toxicity, mobility, and volume (TMV).
5. Short-term effectiveness.
6. Implementability.
7. Cost.
8. State acceptance.
9. Community acceptance.

Zone 1

Dewatering: No Action

The "no action" alternative fails to meet criteria 1, 2, 3, 4, 5, 8, or 9. This alternative can be implemented, by inaction, at no cost.

Dewatering: Gallery versus Surface Extraction Wells

Both alternatives would meet ARARs, and the relevant technical criteria---reduction of TMV, short-term effectiveness, long-term effectiveness, and implementability. While the standards in the SAWPA permit must be met for dewatering, such standards are being consistently met by treatment of extracted water at the mid-canyon pretreatment plant. Continued compliance should not be affected by dewatering. Both alternatives would result in the removal of a significant volume of the soluble, mobile contaminants from the plume, including those of primary concern, VOCs. Dewatering will physically isolate remaining contaminants by eliminating the potential for groundwater transport. The extracted water would be treated at the existing pretreatment plant to remove metals and organics. Both dewatering alternatives can be implemented. Any necessary precautions to ensure short-term protectiveness would be taken during construction and implementation.

The capital costs associated with the gallery system are higher than those for the surface extraction wells. The community and State of California favor selection of dewatering through use of surface extraction wells.

Zone 4

Community Groundwater Cleanup: No Action

The "no action" alternative fails to meet Superfund criteria 1, 2, 3, 4, 5, 8, or 9. This alternative can be implemented, by inaction, at no cost.

Community Groundwater Cleanup:
1. Extraction, No Treatment, Disposal to SARI
2. Extraction, Treatment, Reinjection

Both alternatives meet the first six superfund criteria. Through continous extraction and treatment of contaminated groundwater from Zone 4, reductions in contaminant concentrations to the cleanup levels identified by the Agencies will be sufficiently protective of human health and the environment. Implementation of each alternative will meet action-specific ARARs and TBCs regarding use of air strippers. Contaminant volumes under either alternative will decrease without further degrading the surrounding aquifer.

Contaminant removal combined with treatment will provide long-term effectiveness and ensure short-term protection from any adverse impacts on human health and the environment during construction and implementation. Consideration of implementability and cost shift the balance in favor of the second alternative. If a major modification of the SAWPA permit is not granted to increase allowable discharge of treated water, it may not be possible to implement the first alternative. With respect to costs, the first alternative appears to be less costly. If modeling indications of cleanup time are correct, the first alternative could take three times as long as the second alternative to achieve the remediation goals identified for Zone 4. Selection of the second alternative is favored by the State and the community.

THE SELECTED REMEDY

Zone 1

As an interim response action in Zone 1, the Agencies have selected dewatering using a matrix of surface extraction wells that would be iteratively installed throughout the Zone 1 area.

Initial dewatering to bedrock is anticipated to take one

year, and to remove over 50% of the soluble organics and inorganics estimated to be present in the Zone 1 groundwater. Depending on the outcome of the Agencies' final remedial decision for Zone 1, maintaining the lowered water table level could be required in perpetuity.

At this time, there are no remediation goals being set through this ROD for Zone 1. Implementation of this alternative would include compliance with all identified ARARs.

Zone 4

The Agencies also have selected as an interim response measure cleanup of the community groundwater through extraction, treatment, and reinjection.

Under the selected alternative, a number of wells would be installed along the centerline of the plume south of U.S. Highway 60 to extract contaminated groundwater. Additonal wells installed at the sides of the plume would reinject treated water to accelerate plume cleanup. An estimated extraction rate between 200 and 600 gallons per minute is expected. This rate and the feasibility of reinjection will be confirmed by field studies prior to final design and implementation.

If reinjection is feasible, the extracted water would be temporarily stored and piped to an air stripping unit, where TCE and chloroform in the water would be removed to meet concentrations of 5.0 ug/l and 6.0 ug/l, respectively. The treated water would then be put through reverse osmosis to reduce the nitrates and sulfates to acceptable levels (10 mg/l as N and 110 mg/l, respectively) prior to being reinjected.

The decision whether to use air stripping, as opposed to granular activated carbon, to remove VOCs is considered a design decision that will be confirmed through design studies. Similarly, use of reverse osmosis as opposed to another technology is subject to design studies. In lieu of reverse osmosis, the Agencies are also considering an offset through use of a Chino III subbasin desalter to remove nitrates and sulfates.

If reinjection is not feasible, the Agencies may pursue disposing of the extracted water (after treatment to reduce VOCs, and nitrates and sulfates, if necessary) through a sanitary or industrial sewer.

Field Tests and Studies

Soil-Vapor Extraction in Zone 1

This ROD includes a commitment to conduct a field test of soil-vapor extraction (SVE). Full-scale implementation of the technology will be pursued if the following conditions are met: 1) the results of the field test indicate that the technology can be successfully implemented at the site in a cost-effective manner; and 2) implementation of the technology will not be inconsistent with nor preclude the final response action taken in Zone 1. These determinations cannot be made at this time, but will be made by the Agencies during the development and implementation of the field test, and upon completion of the additional soil treatability studies. The decision whether to implement a full-scale SVE system will be documented at a later date.

If successful, soil-vapor extraction could further reduce the future migration of VOCs into the groundwater by removing them from the unsaturated soil above the water table. Such removal is anticipated to reduce the long-term health risks by decreasing the volume of VOCs in the soil, and thus the future volume of VOCs that could potentially migrate into the groundwater and be transported towards the downgradient community. SVE is anticipated to reduce the short-term health risks from emissions of VOCs during implementation of ex-situ soil treatment technologies, if chosen as part of the final remedy, and to hasten the remediation of Zone 1. Although VOCs represent less than one per cent of the mass of contaminants present in Zone 1, they are significant contaminants because of their relative mobililty and toxicity, and because they are the major organic contaminants found in the downgradient groundwater plume.

In-situ SVE involves a patented process whereby a vaccuum is placed upon wells in the ground above the lowered water table, forcing air to flow through the pore spaces of unsaturated contaminated soil. The above-ground support equipment would include blowers, water/gas separators, and vapor-phase activated carbon adsorption equipment. The extracted air would contain both volatile organics and moisture (water vapor), so a water/gas separator would be required to separate the moisture from the air. The small volume of water separated out of the water/gas separator would be conveyed to the existing mid-canyon pretreatment plant. The volatile contaminants in the vapor phase would be adsorbed onto the activated carbon, which would be regenerated.

The costs of a full-scale SVE system based on revised FS estimates are presented, below.

Capital costs:	$ 15,000,000
Present Worth (7% discount rate):	24,000,000

In pursuing a field test of SVE, ARARs will be met. For the SVE field test, the existing SAWPA permit, embodying the applicable standards under the Clean Water Act's federal pretreatment regulations, 40 C.F.R. Part 403, and its NPDES requirements, 33 U.S.C. section 1311, govern the off-site discharge of treated water to the SARI. The manifest requirements under the Resource Conservation and Recovery Act, 40 C.F.R. Part 262, are applicable to the off-site disposal of spent carbon to an approved regeneration facility. Finally, the VOC emissions standards under Regulation XIII, as federally enforceable under the Clean Air Act, and as enforceable by the State of California under it revised regulation, are applicable to the SVE field tests. Regulation XIII requires best available control technology (BACT) when incremental emissions of various air pollutants, including volatile organic compounds, exceed a certain threshold. Rule 1167 of the SCAQMD and EPA's OSWER Directive 9355.0-28 relating to the control of air emissions at Superfund groundwater sites will be considered to the extent they are suitable to VOC air emissions from the SVE process.

Reinjection of Treated Groundwater in Zones 2 and 3

Also included in this ROD is a commitment to conduct field studies on the reinjection of treated groundwater into Zones 2 and 3. The type of information expected to be gained from such studies include estimated costs, implementability, long-term effectiveness, short-term effectiveness, and reduction in contaminant toxicity, mobility, and volume (TMV). This information, along with information on community and state acceptance, protection of public health and the environment, and compliance with ARARs will be used by the Agencies in determining whether to implement reinjection in Zones 2 and 3. The decision to implement a reinjection system will be documented at a later date.

STATUTORY DETERMINATIONS

Zone 1

Dewatering

Dewatering of Zone 1 is an interim measure that offers an opportunity to reduce risk and prevent further degradation of downgradient groundwater. It does not preclude nor is it inconsistent with potential future remedial actions. During initial dewatering, all action-specific ARARs will be met. No location-specific ARARs have been identified. Remediation goals for Zone 1 are not being addressed by this ROD.

The dewatering process includes treatment at the existing pretreatment plant of the water-soluble contaminants in Zone 1, such as VOCs, other organics, and metals. Dewatering will reduce the risk of human exposure to contaminated groundwater in Zone 1 by extracting and treating most of the contaminated groundwater beneath the zone. Minimizing contact between the source contaminants and uncontaminated groundwater infiltrating into the area will greatly reduce the quantity of contaminants that could migrate downgradient from Zone 1. This is an important aspect of any final remedial decision for the site.

During construction and implementation of the dewatering system, there may be short-term potential for minimal increase of VOC air emissions from well vents, relief valves in force mains, or interim storage tank vents. Based on an analysis of potential air contamination health risks associated with the implementation duration, the excess lifetime carcinogenic risk from inhalation exposure in the community is approximately 2×10^{-8}, and in Pyrite Canyon approximately 2×10^{-6}. These are within the allowable range for excess cancer risk.

Dewatering using surface extraction wells is cost effective in that it provides substantive reduction in the volume and subsequent mobility of the soluble, mobile contaminants in Zone 1 at a cost reasonable to the level of protectiveness. The draft FS report estimates that over 50% of the aqueous-phase contaminant mass in Zone 1 will be removed during the initial period of dewatering.

There does not appear to be any threat to natural resources or any impact on the 100-year floodplain that would result from dewatering. According to a map included in the Riverside County Comprehensive General Plan, there are no unique plant communities

in the Glen Avon area. Nor are there endangered, rare, or threatened animal species near the Stringfellow site. Although several birds, mammals, reptiles, and amphibians have been seen in the vicinity of Pyrite Canyon, no significant, rare or unique permanent habitat in the vicinity of Highway 60 has been observed.

Zone 4

Community Groundwater Cleanup

During system operation, action-specific ARARs and TBCs will be met. There are no forseen unacceptable short-term risks or cross-media impacts that could be caused by its implementation.

The selected remedy is not estimated to be the least expensive alternative for cleaning up the community groundwater, but in light of the confidence levels associated with the cost estimates, the actual costs may not be significantly different than the alternative which involved extraction, no treatment, and disposal to the SARI. Because the Agencies anticipate the selected alternative will hasten the cleanup of Zone 4, the Agencies have determined that the selected response action is the more cost-effective of the alternatives considered.

The selected remedy will reduce the toxicity, mobility, and volume of Stringfellow-related contaminants in the affected community south of Highway 60. The remedy is the most appropriate solution as it also represents the maximum extent to which permanent solutions and treatment can be practically utilized in a cost-effective manner.

Under CERCLA's amended provisions, the statutory preference for treatment is satisfied by the selected remedy. The approaches taken for sidestream and residual management, to be confirmed by design studies prior to final design and implementation, will comply with all requirements.

During construction and implementation of the system, there may be short-term potential for minimal increase of VOC emissions into the air from well vents, relief valves in force mains, or interim storage tank vents. Based on an analysis of potential air contamination health risks associated with the implementation duration, the excess lifetime carcinogenic risk from inhalation exposure in the community is approximately 2×10^{-8}, and in Pyrite Canyon approximately 2×10^{-6}. These are within the acceptable range for excess cancer risk.

According to a map included in the Riverside County Comprehensive General Plan, there are no unique plant communities in the Glen Avon area. Nor are there endangered, rare, or threatened animal species near the Stringfellow site. Although several birds, mammals, reptiles, and amphibians have been seen in the vicinity of Pyrite Canyon, no significant, rare or unique permanent habitat in the vicinity of Highway 60 has been observed.

All of the actions in this ROD are supported by the State and the community.

CHANGES FROM AND CLARIFICATIONS TO THE PROPOSED PLANS

None of the changes and clarifications discussed below warrant public notice and comment, nor affect the remedies selected.

In response to comments on the draft FS report and the Community Groundwater Proposed Plan, estimated extraction rates in Zone 4 were recalculated and now appear to be significantly lower than previously believed. The lowered extraction rates affected the estimated cleanup times and costs for the alternatives being considered, and thus were recalculated. The revised estimates are reflected in the April 1989, "Stringfellow Update" newsletter and reference documents. Predicting the groundwater cleanup time is difficult and existing methods are inexact. Actual extraction rate and yield need to be confirmed through further collection and evaluation of field data.

The new estimated times for cleanup of the Zone 4 contaminant plume presented in this ROD are two to three times longer than those reflected in the Proposed Plan. However, the recalculations still show that the alternative chosen is anticipated to hasten cleanup in Zone 4. With respect to estimated costs, the new figures indicate that the alternative chosen is more costly. Cost figures were calculated using both 7 percent and 10 percent discount rates.

The Community Groundwater Proposed Plan did not mention the necessary first phase of the remedial design, which will involve collection and evaluation of field data in the contaminant plume. This task will enable a more accurate design of the remedial system. Installing prototype extraction wells in selected areas of the community plume, and performing short-term and long-term pumping tests, will provide valuable information on aquifer

characteristics and water quantity and quality to be extracted and treated. Based on this information, it may become necessary to make changes to the treatment and disposal process currently envisioned. The modifications will be made during detailed remedial design, and if warranted, will be documented at a later date.

The Community Groundwater Proposed Plan assumed that no treatment would be needed for the extracted water to be discharged to an industrial sewer, such as the SARI. This was based on the assumption that the chemical quality of the extracted water would be within the present quality limits of the SAWPA discharge permit. In case the extracted water is found to exceed the discharge permit water quality limit, or if discharge to the industrial sewer is not permitted without reducing VOC concentrations in the extracted water, the water would be treated for VOC removal prior to discharge. Thus the alternative with disposal to the SARI line has been evaluated in two different ways: (1) without using air stripping (no treatment), and (2) using air stripping before discharge to an industrial sewer. For both these subalternatives, cleanup time is still estimated to be approximately three times longer than the alternative selected. Therefore, addition of this subalternative did not alter the selection of the remedy.

The Community Groundwater Proposed Plan indicated that the State Action Level for chloroform (4.3 ug/l) would be set as the remediation goal. As discussed in this ROD, the remediation goal for chloroform has been identified as 6.0 ug/l. The concentration coincides with the new State Action Level, as well as EPA's 10^{-6} carcinogenic risk level.

With respect to nitrates and sulfates, the Community Groundwater Proposed Plan implied a number of things which subsequently have been clarified through this ROD. First, the response action in Zone 4 is on-site. Therefore, a permit from the Regional Water Quality Control Board is not required, although the substantive portions of the Basin Plan applicable to the response action will need to be met. Secondly, the Proposed Plan indicated that the cleanup (remediation) goal for nitrates would be the federal MCL. As discussed earlier, the Agencies are considering setting the goal at background by invoking a waiver based on the technical impractacability of meeting a cleanup standard which is lower than anthropogenic background conditions which currently are believed to exceed the federal MCL. Thirdly, with respect to sulfates, the Proposed Plan implied that the remediation goal would be set at the water quality objective

specified in the RWQCB's Basin Plan. Rather, in setting the remediation goal, the Agencies will consider the proposed EPA MCL for sulfates. If the rule is promulgated, the MCL will become ARAR.

The Overall Proposed Plan stated that soil-vapor extraction (SVE) would be implemented if a field test proved favorable. The ROD offers further explanation by clarifying that the Agencies are committed to full-scale implementation of SVE if the field test indicates that SVE could be successfully used at the site in a cost-effective manner, and that implementation of SVE would not preclude nor be inconsistent with the final remedial decision for Zone 1. These determinations cannot be made at this time, but will be made by the Agencies during the development and implementation of the test and upon completion of the additional soil treatability studies. The decision whether to implement SVE will documented at a later date.

The Overall Proposed Plan also implied that a ROD covering RA6 in its entirety would be issued by the Agencies. In response to community comment, and through issuance of this ROD, the Agencies have agreed to first pursue the dewatering and SVE aspects of RA6, and to combine these with the decision to remediate the groundwater plume in the community area. Long-term continuation of downgradient plume management activities will be addressed in the final ROD.

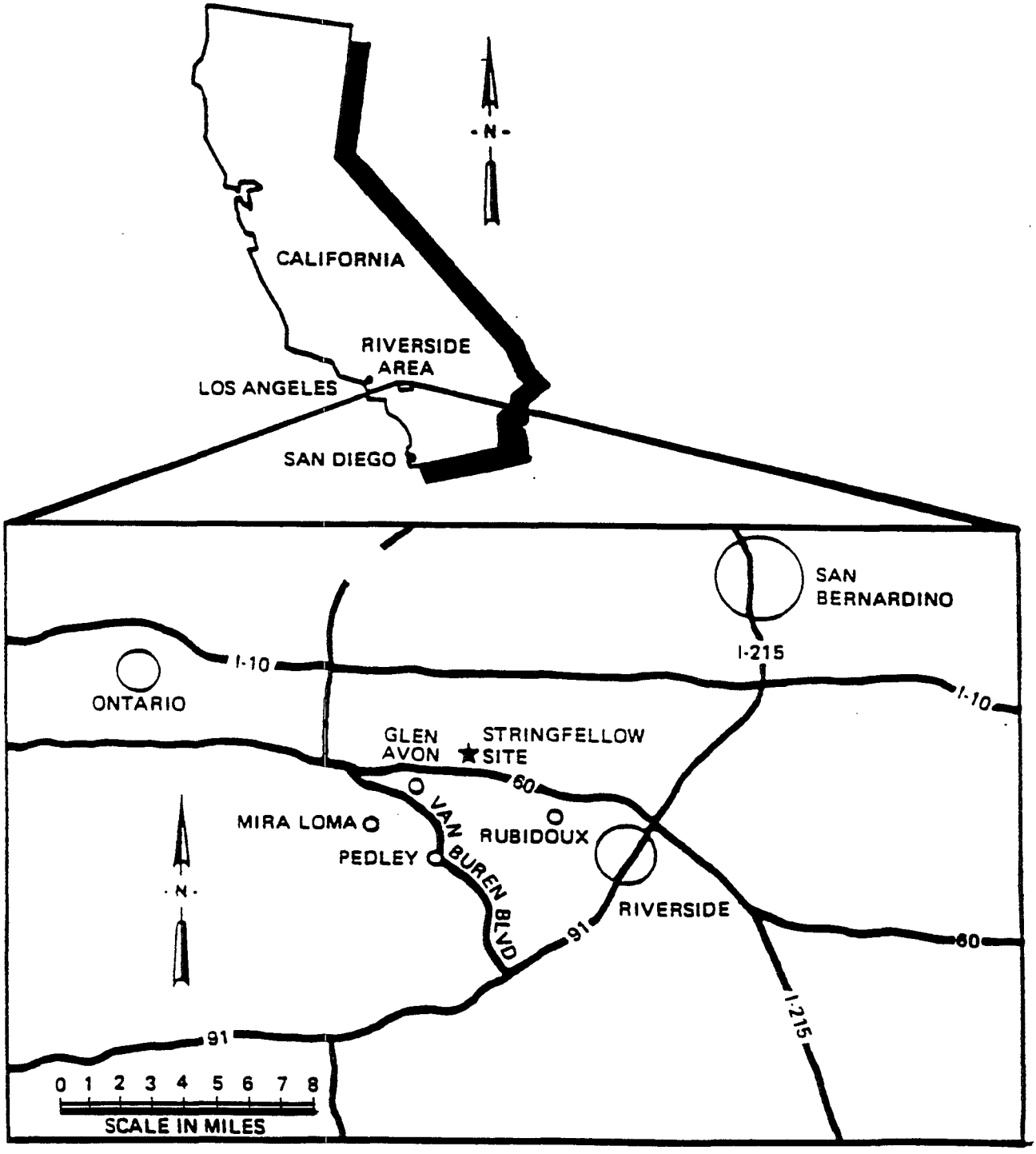
CALIFORNIA
RIVERSIDE AREA
LOS ANGELES
SAN DIEGO
N
SAN BERNARDINO
I-215
I-10
ONTARIO
GLEN AVON
STRINGFELLOW SITE
60
MIRA LOMA
PEDLEY
VAN BUREN BLVD
RUBIDOUX
RIVERSIDE
91
0 1 2 3 4 5 6 7 8
SCALE IN MILES

Figure 1

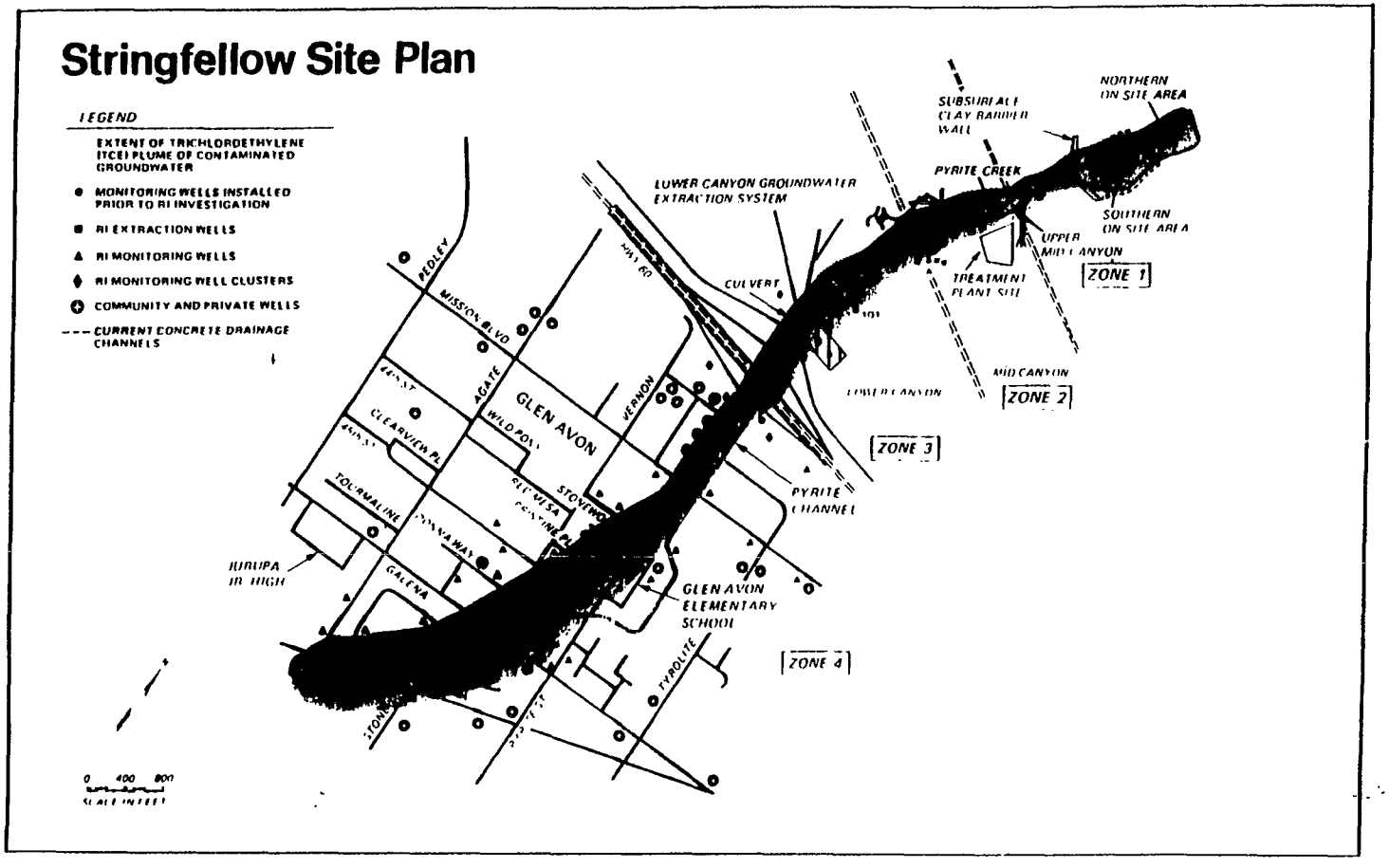
Stringfellow Site Plan
LEGEND
EXTENT OF TRICHLOROETHYLENE (TCE) PLUME OF CONTAMINATED GROUNDWATER
MONITORING WELLS INSTALLED PRIOR TO RI INVESTIGATION
RI EXTRACTION WELLS
RI MONITORING WELLS
RI MONITORING WELL CLUSTERS
COMMUNITY AND PRIVATE WELLS
CURRENT CONCRETE DRAINAGE CHANNELS
SUBSURFACE CLAY BARRIER WALL
NORTHERN ON SITE AREA
PYRITE CREEK
LOWER CANYON GROUNDWATER EXTRACTION SYSTEM
SOUTHERN ON SITE AREA
UPPER MID CANYON
TREATMENT PLANT SITE
ZONE 1
CULVERT
MID CANYON
ZONE 2
ZONE 3
PYRITE CHANNEL
PEDLEY
MISSION BLVD
AGATE
GLEN AVON
VERNON
CLEARVIEW PL
TOURMALINE
GALENA
JURUPA JR HIGH
GLEN AVON ELEMENTARY SCHOOL
ZONE 4
PYROLITE
0 400 800
SCALE IN FEET

Figure 2

Appendix C

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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, PEOPLE OF THE STATE OF CALIFORNIA, et al., Plaintiffs, v. J. B. STRINGFELLOW, JR., et al., Defendants. AND RELATED COUNTERCLAIMS	No. CIV 83-2501 JMI (MX) STIPULATION, RECOMMENDATIO: OF SPECIAL MASTER AND ORDE: DATE: TIME: COURT: JAMES M. IDEMAN SPECIAL MASTER: HARRY V. PEETRIS

STIPULATION, RECOMMENDATION OF SPECIAL MASTER AND ORDER

1. The United States and the defendants whose signatures appear below ("defendants") enter into the following Stipulation and Order in light of the following considerations and request that the Court enter this Stipulation as an order in this action and adopt the attached Cost Recovery Schedule as an order for the further management of this litigation.

2. The United States and defendants (collectively the "parties") have discussed how the progress of this litigation can be materially advanced so as to bring about its most just, speedy and inexpensive resolution at the earliest

practicable time in accordance with Rule 1 of the Federal Rules of Civil Procedure.

3. The parties agree that two of the principal disputes preventing final resolution of the case are (a) the United States' entitlement to recover costs it has incurred to date with respect to the Stringfellow site and (b) the share of costs that the State of California (the "State") must pay to defendants as a result of its liability under defendants' counterclaims.

4. With respect to the first of the disputes -- the United States' entitlement to recover response costs -- there are at least three components (a) the United States' claims that it has incurred certain response costs which are not inconsistent with the National Contingency Plan ("NCP"), (b) defendants' dispute with respect to those claims, and (c) defendants' claims that alleged misconduct by EPA precludes recovery of some or all of those costs.

5. The parties have agreed to a procedure for resolving the issues described in paragraph 4, which they believe, when coupled with a prompt determination of the State's share of liability, will lead to a more just, speedy and efficient conclusion of this litigation.

6. The express purposes of this Stipulation are to encourage swift resolution of cost recovery issues in this action and to hasten resolution of the entire case. Paragraphs 22 and 24 below provide defendants with options

they may elect during certain time periods that will allow defendants to reach certain agreements with the United States.

7. Subject to Paragraph 37, if the Court adopts this Stipulation and the attached Cost Recovery Resolution Schedule the parties agree that trial of the alleged EPA misconduct issue now scheduled for September 1991 will not be necessary.

8. Rather, it will materially advance the progress of this litigation for the Court to determine instead the issue of the State's share of liability in or as soon after September 1991 as possible.

9. Accordingly, the parties ask the Court to enter the following Stipulation and Cost Recovery Resolution Schedule as an order regulating further proceedings in this action.

DEFINITIONS

10. Unless stated otherwise herein, all terms shall have the meanings provided under the Comprehensive Environmental Response, Compensation and Liability Act, as amended, ("CERCLA") 42. U.S.C. § 9601 et seq.

11. The term "Undisputed Costs" refers to those response costs claimed by the United States in this action that the defendants agree are recoverable by the United States and which are incorporated into a stipulation and order filed with this Court on or before the Cost Stipulation Deadline, in accordance with the terms set forth in this Stipulation and the attached Cost Recovery Resolution Schedule; that

stipulation and order shall contain findings of fact and conclusions of law that the removal or remedial actions for which the Undisputed Costs were incurred were consistent with the NCP.

12. The term "Disputed Costs" refers to those response costs claimed by the United States in this action that the defendants do not agree are recoverable; that is, all response costs subject to this Stipulation that defendants do not stipulate by the Cost Stipulation Deadline are recoverable.

13. The term "Final State Order" means a judgment or order on the State Share as to which all appeal rights have been exhausted or expired and, in the case of an order or judgment in favor of defendants, one upon which defendants are entitled to execute.

14. The term "Cost Stipulation Deadline" means September 15, 1991 or such other date as the parties may agree upon in writing.

15. The term "State Share" means the share of costs that the State of California must pay to defendants as a result of its liability under defendants' counterclaim.

~~16~~. The term United States' "cost claims" means those claims for costs allegedly incurred by the United States prior to approximately September 30, 1989 (subject to the variation in cutoff dates described in Paragraph 19 below) which are identified in the United States' response to

interrogatories propounded by Montrose Chemical Corporation of California (relating to cost issues).

STIPULATION

17. Defendants agree for purposes of this litigation and any other litigation between them (or any of them) and the United States to waive all claims and defenses they may have arising out of, and agree not to raise as a bar or limitation to recovery of costs by the United States, any action or inaction on the part of the former EPA Administrator Ann Burford, or on the part of former EPA Assistant Administrator Rita Lavelle, regardless of whether such action or inaction was within either official's lawful discretion. This waiver includes, but is not limited to, any claims, defenses, or offers of proof relating to the failure of the Environmental Protection Agency to sign a cooperative agreement with the State of California for the Stringfellow site (the "Site") prior to June 1983 and any claims, defenses, or other proof relating to any allegation that any response action at the site was initiated, delayed, or withheld for political reasons. In addition, defendants agree not to assert in this litigation or in any other litigation between them (or ~~any~~ of them) and the United States that any remedial decision for the Site was affected or influenced by any misconduct of the type identified in the Investigation of the Environmental Protection Agency: Report on the President's Claim of Executive Privilege Over EPA Documents, Abuses in the Superfund Program and Other Matters, by the Subcommittee on

Oversight and Investigations of the Energy and Commerce Committee, U.S. House of Representatives, 98th Cong. 2nd Sess., 1984 (the "Dingell Report").

18. In September 1991, on the date currently scheduled for commencement of the trial regarding defendants' allegations of misconduct by EPA (or as soon thereafter as practicable but not later than April 1992), a trial will be commenced before Special Master Peetris to determine the sole issue of the share of costs that the State of California must pay to the defendants as a result of its liability under the defendants' counterclaim. In this Stipulation this trial shall be referred to as the State Share Trial. Defendants agree not to seek a postponement of the State Share Trial without the agreement of the United States.

19. Between April 1991 and the date scheduled for the trial under the Cost Recovery Resolution Schedule, the parties will attempt in good faith to resolve cost recovery disputes concerning the United States' cost claims; i.e., regarding those costs incurred by the United States prior to approximately September 30, 1989, in accordance with the terms of this Stipulation and the procedure set forth in the Cost Recovery Schedule. Because of variations in the accounting for different elements of costs sought by the United States, the cutoff date for some claims to be resolved under this Stipulation may be before or after September 30, 1989. The period applicable to each cost element of the United States' claim to be resolved under this Stipulation will be defined by

the United States' response to interrogatories propounded by Montrose Chemical Corporation of California (relating to cost issues).

20. For purposes of this litigation, the parties agree that "costs recoverable by the United States" or "recoverable costs" means those direct and indirect costs of response incurred by the United States recoverable pursuant to CERCLA § 107, 42 U.S.C. § 9607(a), including any pre-judgment interest due thereon as authorized by law. This Stipulation does not address claims the United States may have for damage to natural resources or any other claim that does not involve recovery of response costs.

21. Defendants assert that they have a defense that certain of the costs claimed by the United States are not recoverable because of alleged deficiencies in the federal-state cooperative agreement relating to the Stringfellow site. The United States denies both the factual and legal premise of defendants' assertion. The parties agree, however, that defendants may assert such claim pursuant to the procedures established under the Cost Recovery Resolution Schedule.

--~~22~~. If within sixty (60) days after receipt of the United States' response to the outstanding interrogatories and document requests on cost recovery propounded by Montrose Chemical Corporation of California or such other date as the parties may agree in writing, defendants stipulate that all response actions covered by the United States' cost claims

were consistent with the National Contingency Plan and that the only issues to be resolved concerning the United States' cost claims are (a) whether costs claimed were incurred in connection with, or are attributable to, a response action for the Stringfellow site, and (b) whether the amounts of particular costs claimed by the United States are accurate, the United States will provide defendants with summaries of each cost claim and back-up documentation to enable defendants to verify these costs. If defendants enter into such stipulation the United States will also forbear seeking the entry of an enforceable judgment for cost claims resolved pursuant to this Stipulation and Cost Recovery Resolution Schedule (whether by agreement, order or judgment from the Court) until sixty (60) days after the earliest of (a) the date there is a Final State Order or (b) the date there is a settlement between the State and defendants resolving the State's Share. For purposes of this Stipulation, a settlement of the State's Share includes any agreement that makes the State Share trial unnecessary or that results in indefinite postponement of the State Share Trial. The United States and defendants shall meet and confer to attempt to agree on the amount ~~of~~ costs recoverable by the United States as set forth in the Cost Recovery Resolution Schedule. The parties shall file with the Court written stipulations memorializing any agreements reached. Any disputes will be resolved in accordance with the terms of the Cost Recovery Resolution Schedule.

23. If a stipulation limiting the issues to be resolved on cost recovery as provided in Paragraph 22 is not filed with the Court, or such stipulation does not resolve all outstanding issues on cost recovery, then the parties shall continue under the Cost Recovery Resolution Schedule to resolve the remaining issues.

24. If Defendants do not elect to enter into the stipulation limiting the issues to be resolved on cost recovery as provided in Paragraph 22, defendants shall pay into the Superfund, within sixty (60) days of the District Court's determination of the State's Share, an amount equal to the greater of the percentage of responsibility not allocated to the State by the District Court in the State Share Trial (regardless of whether such determination is or may be appealed) (a) times the amount of the Undisputed Costs, or (b) times $40 million (Forty Million Dollars). If defendants make a payment pursuant to clause (b) of the preceding sentence of this Paragraph 24, then the portion of such payment equal to the percentage of responsibility not allocated to the State by the District Court in the State Share Trial times the amount of the Undisputed Costs shall be used to reduce the Undisputed Costs for the purposes of the remainder of this paragraph and the remaining portion of such payment shall reduce the Disputed Costs which are dealt with under Paragraph 25. With respect to any Undisputed Costs that have not been paid by defendants as set forth in the preceding sentences, the United States will not seek entry of a judgment

against defendants until sixty (60) days after the earliest of (a) the date there is a Final State Order, or (b) the date there is a settlement between the State and defendants resolving the State's Share. Payments made pursuant to this paragraph shall be applied against (and reduce) the United States' cost claims. To the extent that any judgment for costs claims ultimately obtained by the United States is less than the amount paid by defendants into the Superfund pursuant to this paragraph, defendants shall be credited with this difference in calculating any additional payments due for recoverable costs not governed by this agreement.

25. With respect to Disputed Costs for which the United States obtains a final order or judgment, the United States reserves the right to seek to enforce such judgment(s) as provided by law. Subject to the provisions of Paragraph 29, defendants reserve any defense they may have to enforcement of such judgments.

26. Upon the conclusion of the State Share Trial, including post-trial motions, the United States and defendants shall jointly move the Court for entry of final judgment as to the State's Share pursuant to Rule 54(b) of the Federal Rules of Civil Procedure.

27. In the event the Court determines after duly noticed motion that defendants have failed to exercise all reasonable efforts to obtain an enforceable judgment against the State as to State Share, then the United States may obtain and seek to enforce a judgment against defendants for all

Undisputed Costs. Prior to making any such motion, the United States must first give timely notice and a reasonable time to cure any alleged failure on the part of defendants to exercise all such reasonable efforts.

28. Notwithstanding any other provision of this Stipulation and Order, if the sole cause of defendants being unable to obtain a judgment on which they are entitled to execute against the State is the United States' agreement to forbear seeking entry of an enforceable judgment against defendants, then the parties will arrange for concurrent execution of their judgments.

29. Subject to the provisions of Paragraph 22 above (regarding the United States' agreement to forbear seeking the entry of an enforceable judgment), upon the conclusion of any trial conducted pursuant to the Cost Recovery Resolution Schedule, including post-trial motions (or upon the entry of summary judgment in connection therewith), the United States and defendants shall jointly move the Court for entry of final judgment as to the matters so tried or adjudicated pursuant to Rule 54(b) of the Federal Rules of Civil Procedure. Defendants shall not seek a stay of enforcement of that judgment.

30. The United States has incurred response costs in connection with the Stringfellow site subsequent to the dates for which this procedure will resolve issues and it will continue to incur such costs. To the extent that the United States' claims for recovery of these additional costs raise

issues that are not disposed of through the procedures set forth in the Cost Recovery Resolution Schedule, they are not affected by this Stipulation, and the United States shall have all rights to it under law to seek the recovery of such costs. Defendants reserve all defenses available to them under law with respect to the United States' claims for such additional costs.

31. Interest has accrued and shall continue to accrue on all recoverable costs including but not limited to all Undisputed and Disputed Costs referred to herein. All interest payable pursuant to this Stipulation and Order shall accrue at the applicable legal rate. The United States is entitled to recover such interest on all recoverable costs covered by this Stipulation.

32. This Stipulation modifies the Case Management Order only as to the matters specifically addressed herein and does not alter any other portion of the Case Management Order. This Stipulation does not affect any right that either the United States or defendants may have to seek any relief to which they are entitled not explicitly covered herein, including injunctive relief.

--~~33~~. Subject to the terms of this Stipulation, defendants shall be jointly and severally liable for any payments that may become due or collectable under this Stipulation or through the process described in the Cost Recovery Resolution Schedule. Defendants reserve any right they may have to challenge enforcement of any judgment not

arising out of this Stipulation or the Cost Recovery Resolution Schedule.

34. No provision of this Stipulation shall be effective unless this entire Stipulation has been approved by the Court.

35. It is understood and agreed that in no event shall defendants be required to pay more under this Stipulation and Order than (a) the amount of the United States' cost claims (as described in Paragraph 16 above) which the Untied States asserts are approximately $60 million (Sixty Million Dollars), including interest, to date, plus (b) any recoverable interest which continues to accrue from this day forward on the cost claims.

36. The parties may, by mutual agreement, continue the dates specified in this Stipulation and Order (other than the trial dates) without further order of the Court.

37. Any party to this litigation which is not a party to this Stipulation and Order is hereby ordered to show cause why the claims and defenses which are the subject of paragraph 17 shall not be dismissed from the litigation as to all parties, including those not party to this Stipulation and Order. ~~Any~~ party which wishes to assert that such defenses should not be dismissed shall file a memorandum of points and authorities in support of that assertion on or before _____, 1991. Opposition memoranda shall be filed and served on or before _____, 1991 and reply memoranda on or before _____, 1991. On May __, 1991 Special Master

Peetris will convene a hearing to determine whether there is a cause not to dismiss those defenses, and make a recommendation thereon to the District Court. If good cause is not shown, the Special Master shall recommend that those defenses be dismissed. In the event the Court determines that any of the issues relating to alleged misconduct by EPA scheduled for trial in this Court's December 10, 1990, Order are not dismissed with prejudice then: (1) the trial currently scheduled for September 3, 1991, shall remain on calendar and the State Share trial shall be scheduled as soon as practicable after the trial of the allegations of EPA's misconduct; and (2) the United States may at such time as it deems appropriate and upon written notice to the parties to this Stipulation, suspend the schedule contained in the Cost Recovery Resolution Schedule until 60 days after either the last post-trial brief is filed by the United States with the Special Master or the Special Master recommends entry of summary judgment on the issues scheduled for trial; provided that if the United States so elects to suspend the Cost

Recovery Resolution Schedule, then the Cost Stipulation Deadline shall also be suspended pro tanto.

RICHARD B. STEWART
Assistant Attorney General

Dated: March 25, 1991

PHILLIP A. BROOKS
Environmental Enforcement Section
Environmental and Natural Resource Division
United States Department of Justic
P.O. Box 7611
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Dated: March 22, 1991

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Dated: March 22, 1991

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Dated: March 22, 1991

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Joseph D. Lonardo
Joseph D. Lonardo, Esq.
Attorney for
Stauffer Chemical Co.

Dated: _____ ___, 1991

_____
Vincent Fish, Esq.
Attorney for
Weyerhaeuser Co.

IT IS RECOMMENDED that this Court issue an Order adopting this Stipulation.

Dated: _____ ___, 1991

_____
Honorable Harry V. Peetris
Special Master

IT IS SO ORDERED.

Dated: _____ ___, 1991

_____
Honorable James M. Ideman
United States District Judge

COST RECOVERY RESOLUTION SCHEDULE

This Attachment sets forth (a) the procedures by which all parties to the litigation will attempt in good faith to resolve cost recovery disputes and (b) the schedule and the procedures through which disputes concerning costs will be resolved. To the extent the United States does not certify completion of production of documents pursuant to the outstanding requests for production propounded by Montrose Chemical Corporation of California ("Montrose") or serve responses to the outstanding interrogatories propounded by Montrose as specified hereunder, succeeding dates under this schedule shall be continued pro tanto. In the event that the Court determines that the United States' responses to the request for production of documents or interrogatories is inadequate and that defendants are prejudiced thereby, the Court may allow such additional discovery as is necessary to remove such prejudice. Notwithstanding the foregoing, the date in Paragraph 22 for stipulating to the issues to be tried and the Cost Stipulation Deadline (except as provided in Paragraph 37 at clause "(2)") shall not be extended except by agreement of the parties. The parties may, by mutual agreement, continue these dates (other than the trial date) without Court order.

Date	Procedure
04/01/91	The United States shall (a) complete its production of documents in response to defendants' outstanding

	document requests on cost recovery and (b) serve its answers to defendants' outstanding interrogatories on cost recovery.
04/22/91	Defendants shall notify the United States in writing of their objections, if any, to the United States' answers to Interrogatories and, if necessary, defendants shall request a "meet and confer" conference.
05/01/91	The United States shall (a) serve its list of documents withheld under a claim of privilege and (b) certify that its production of documents in response to defendants' outstanding cost recovery discovery requests is complete.
05/30/91-06/30/91	Defendants and the United States shall meet and confer to attempt to resolve issues relating to the recoverability of the United States' costs.
	- Any agreements reached shall be reduced to a written stipulation and filed with the Court.

- Stipulations may cover some or all elements of proof necessary to establish the recoverability of any item of the United States' costs; e.g., defendants may stipulate to the consistency of an action with the NCP but not to the amount claimed with respect to the action. All such stipulations shall be tendered to the Court for approval through a proposed order setting forth proposed findings of fact and conclusions of law.
- For any item of costs where the only impediment to stipulation that a sum certain is recoverable is verification of the accuracy of the amount claimed, the United States shall provide defendants with summaries of each cost claim and back-up documentation to enable defendants to determine whether to stipulate to the amount of such item. Defendants may conduct any additional discovery to the extent permitted by law, including depositions of fact witnesses. The United States has the right to object to any particular

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05/15/91-08/15/91

	discovery request and may conduct discovery of defendants, to the extent permitted by law. Unless otherwise agreed by the parties, no depositions of expert witnesses shall be conducted during this period.
06/10/91	Last day for defendants to serve and file their challenges, if any to (a) claims of privilege for any documents on the United States' privilege list and (b) the scope of the production described in the United States' certification that its production is complete.
09/01/91-09/15/91	Defendants and the United States shall meet and confer to attempt to resolve the issues relating to the recoverability of the United States' costs. Any agreements reached shall be reduced to a written stipulation and filed with the Court. All such stipulations shall be tendered to the Court for approval through a proposed order setting forth proposed findings of fact and conclusions of law. Stipulations may cover some or all elements of the recoverability of any

item of the United States' costs; e.g., defendants may stipulate to the consistency of an action with the NCP but not to the amount claimed with respect to that action.

- For any item of cost where the only impediment to stipulation that a sum certain is recoverable is verification of the accuracy of the amount claimed, the United States shall provide defendants with summaries of each cost claim and back-up documentation to enable defendants to determine whether to stipulate to the amount of such item.

09/15/91-11/15/91 — The United States and defendants shall conduct discovery of expert opinions to the extent permitted by law. Either party may propound requests for admission, move to compel responses to discovery requests propounded after March 15, 1991, or challenge the sufficiency of responses to requests for admission, to the extent permitted by law.

12/15/91 — Last day for dispositive motions to be filed.

02/18/92 - (estimated)*/	Trial will commence before Special Master Peetris on any outstanding issues regarding the recoverability of costs incurred by the United States. The determinations reached by the Special Master may be appealed by either side until a final judgment not appealable is obtained.

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*/ This trial shall commence no sooner than sixty (60) days after the completion of the State Share Trial.

CERTIFICATE OF SERVICE BY MAIL

CATHERINE J. WILLIAMS hereby certifies:

1. That her name is Catherine J. Williams, she is employed at and her business address is Three Embarcadero Center, San Francisco, California 94111; that she is a citizen of the United States and she is over the age of 18 years; and that she is not a party to the within titled cause.

2. That she is employed in the office of an attorney admitted to the Bar of this Court, and that service was made at that attorney's direction.

3. That she served a copy of the foregoing document entitled Stipulation, Recommendation of Special Master and Order upon the following named persons by causing (i) envelopes to be addressed thereto as follows, (ii) a copy of the foregoing document to be enclosed and sealed therein, and (iii) said envelopes with postage fully prepaid to be deposited in the United States mail at San Francisco, California, on March 27, 1991:

See Liaison Service List
Dated January 22, 1991

I certify under penalty of perjury that the foregoing is true and correct and that this certificate was executed at San Francisco, California on March 27, 1991.

Catherine J. Williams

Catherine J. Williams